PANAMERICAN SOCIETY for PIGMENT CELL RESEARCH

# PASPCR Newsletter

**Volume 3 Number 1** **March,1995**

**Introduction . . .** **by the Publications Committee**

The **PASPCR** *Newsletter* is published quarterly and is intended to serve as a means of communication for the members of our Society. As such, we invite our membership to actively contribute to the *Newsletter*; help us to update the Job Listings, Calendar of Events, Meeting Reports, Abstracts in press and other items of general membership interest. If you attend a scientific meeting at which you heard about work which you think will be of interest to the membership of the **PASPCR**, please write a few paragraphs summarizing what was presented and share it with us. If you should have a change of affiliation or address, we'd like to know that, too. This is **your** *Newsletter*, and we depend upon you to help us make sure it best serves the Society's needs. Contributions and comments can be sent to any of the members of the Publications Committee.

The Publications Committee wants to make collaboration between members of the Society as easy as possible and toward that goal we are encouraging the use of E-mail and other forms of electronic communications. We encourage everyone who has an E-mail address to forward it to the Publications Committee. The Publications Committee is willing to help any member of the PASPCR get you in touch with the individuals who can set up your E-mail account and to some extent will help you get started.

The **PASPCR** has a Gopher server that can be found from your home Gopher under "International Organizations" as "PanAmerican Society for Pigment Cell Research (PASPCR)". Here you have access to past PASPCR Newsletters, the current ByLaws and membership list. We are currently working with the IFPCS to develop a list of resources available to PASPCR members. This list will include cell lines, antibodies, coat color mutants and other items of interest to pigment researchers. If you have any other ideas for items to be placed on Gopher, please contact someone on the Newsletter Publishing Committee.

**IN THIS ISSUE . . . .**

**PanAmerican Society for Pigment Cell Research**

c/o **Dr. Richard King**
Department of Medicine
University of Minnesota
516 Delaware St, SE
Minneapolis, MN 55455
FAX: (612) 624-6645



The **PASPCR Newsletter** is published quarterly; for further information and/or to submit articles, contact the Publications Committee:

**Dr. William S. Oetting (chair)**
University of Minnesota
16-262 Moos Tower
515 Delaware St., S.E.
Minneapolis, MN 55455-0311
FAX: (612) 626-4027
E-mail: BILL@LENTI.MED.UMN.EDU

**Dr. Alan N. Houghton**
Memorial Sloan-Kettering Cancer Center
Chief, Clinical Immunology Service
1275 York Avenue
New York, NY 10021
FAX: (212) 717-3036

**Dr. Walter C. Quevedo, Jr.**
Brown University
Division of Biology and Medicine
Box G
Providence, RI 02912
FAX: (401) 863-1971

## Calendar of Events :

**Mar 18 - 22, 1995** Annual Meeting of the American Association for Cancer Research, to be held in Toronto, Canada (contact: AACR National Office, FAX: 215/440-9313)

**May 10 - 12, 1995** Melanoma '95, to be held in Brighton, United Kingdom (contact: Dr N Kirkham, Coordinators Office, 14A Ship Street, Brighton BN1 1AD, East Sussex, United Kingdom, FAX: 44/273-323882)

**May 24 - 28, 1995** 56th Annual Meeting of the Society for Investigative Dermatology, to be held in Chicago, Illinois (contact: SID, Suite 500A, 11001 Cedar Ave, Cleveland, OH 44106, FAX: 216/844-6810)

**June 25 - 28, 1995** VIth PASPCR Annual Meeting, to be held in Kansas City, Kansas, (contact: Dr Sally Frost-Mason, Department of Physiology, University of Kansas, 3038 Hayworth Hall, Lawrence, KS 66046-2106, FAX: 913/864-5321)

**Jul 11 - 15, 1995** 44th Annual Symp on the Biology of Skin, to be held in Snowmass Village, CO (contact: Cutaneous Biology Foundation, 4200 E 9th Ave, UCHSC Box B 144, Denver, CO 80262; FAX: 303/270-8272)

**Oct 29- Nov 3, 1996** XVIth International Pigment Cell Conference, to be held in Anaheim, California, (contact: MMC/UCI Center for Health Education, PO Box 1428, Long Beach, CA 90801-1428, FAX: 310/933-2012)

**Jun 15- 18, 1997** VIIth PASPCR Annual Meeting, to be held in Providence, RI (contact: Dr. Walter C Quevedo, Jr., Brown University, Division of Biology and Medicine, Providence, RI 02912; FAX: 401/863-1971)

## Welcome to New Members

**by Richard A King**

We welcome the following new members to the **PASPCR** . . . .

Gregory J. Kramer
Shosuke Ito
Masayoshi Tachibana
George L. Wolff

If anyone is interested in joining our Society or wishes to sponsor a member, application forms can be obtained from Dr. Richard King at the PASPCR Secretary/Treasurer's office.

## Corporate Sponsors

**by Richard A King**

The PASPCR would like to acknowledge and thank our Corporate Sponsors; the list below reflects contributions over the past 2 years. Financial gifts from these sponsors have allowed our Society to increase benefits to the membership far out of proportion to the actual dues collected from members. Monies contributed by these sponsors have been used over the years to support various PASPCR functions including our Young Investigator Award program, meeting travel stipends, annual meeting expenses and this Newsletter.

| *GOLD Sponsors* | *SILVER Sponsors* | *BRONZE Sponsors* |
|---|---|---|
| Ortho Pharmaceutical Corp | Avon Products, Inc | Galderma Laboratories, Inc |
| | Bristol-Myers Squibb Co | Lawrence M Gelb Research |
| | Dermik Laboratories | Foundation of Clairol, Inc |
| | Schering-Plough Corp | Procter and Gamble Co |

## 1994 PASPCR Council Election Results

**by Richard A King**

The following members were elected to 3 year terms as Council Members beginning January 1, 1995.

Alan N. Houghton
William S. Oetting
Walter C. Quevedo, Jr.

## 1995 PASPCR VI$^{th}$ Annual Meeting Site :

**by Sally Frost-Mason**

**Update - Sixth Meeting of the PASPCR, June 25-28, 1995, Kansas City, MO**

Plans continue to evolve for the Sixth Meeting of the PASPCR. First announcements were mailed out in October, and response thus far has been strong, with many requests for additional information having been received by the planning committee. If you did not receive a first announcement and would like more information about these meetings please contact Sally Frost-Mason at (913)864-3661, FAX (913)864-5331, or email: sfm@clasmain.clas.ukans.edu.

The scientific program for these meetings will be highlighted by keynote talks by Roger Cone, Garth Nicholson, and Shirley Tilghman. Symposia complementing each of the research areas addressed by the keynote speakers are being organized, and minisymposia on a variety of subjects are also planned. There will be posters with ample time for display and discussion and many opportunities for informal interactions at these meetings.

The meetings will be held at the Ritz-Carlton Hotel on the Country Club Plaza in Kansas City, Missouri. This elegant hotel is within walking distance of many fine restaurants, shops, and museums, so participants should be encouraged to bring family and friends to enjoy the festivities.

Planned activities will begin Sunday evening with a poolside reception at the Ritz. On Monday evening come prepared to join the fun as we will be heading out to the Benjamin Ranch on the outskirts of KC. There we will be treated to a meal including barbecue chicken, pork ribs, and beef brisket with a selection of KC's finest barbecue sauces. After dinner we can all unwind to country western and contemporary music and dancing and, for those who are not experienced at this, a dance instructor will be on hand to help us all line dance. Not a dancer? Not to worry! You can try your hand at steer roping on the steel horse or the cow chip toss (using the "real thing"). A gypsy fortune teller will be on hand to predict you chances on that next grant renewal! The bar will be open all evening. The atmosphere at the ranch is relaxed and casual, and if you own cowboy boots don't forget to bring them along.

Tuesday evening you may wish to go on a Kansas City Jazz Pub Crawl and experience jazz at its finest at three of the local establishments famous for their live entertainment. Or perhaps you would like to spend an evening on a riverboat gambling. Or maybe at the end of two long days you'll choose a relaxing evening in one of Kansas City's fine restaurants and bars located on the Plaza near the Ritz.

Whatever your preference, we hope you will join us in Kansas City in June. The science should be superb and the activities are bound to be fun!

## XVI$^{th}$ IPCC (International Pigment Cell Conference)

**by Roger Bowers, Frank Meyskens**

The XVI$^{th}$ International Pigment Cell Conference will be held from October 29$^{th}$ to November 3$^{rd}$, 1996 at the Disneyland Hotel in Anaheim, California. Frank Meyskens is the Organizer of this meeting with Roger Bowers and Alistair Cochran serving as co-chairs of the Organizing Committee. More information regarding this meeting (and its interesting venue) will be forthcoming in future Newsletters and in separate mailings. Dr. Meyskens has asked that the following announcements be included in our Newsletter.

**Satellite Conferences**: No satellite conferences will be supported by the local organizing committee that are held within the time frame of the XVIth International Pigment Cell Conference, Tuesday, October 29, 1996; 6:00 pm to Sunday, November 3, 1996; 8:00 am. There are a wide number of venues possible to hold small or large satellite conferences either before or after the main pigment cell meeting. Our Memorial/UCI Educational Foundation will be happy to work with you in planning, for a small fee, and we request that we be notified of the intent of any satellite conference no later than June 1, 1995. If we are notified later than this date, accommodations and planning availability cannot be guaranteed.

**Competitive Stipend for Travel Support**: The Organizing Committee will provide funds in a competitive manner for graduate students, post-doctoral fellows and those within five years of formal academic appointment. The number of stipends will depend on the availability of funds and further information will become available during the second and subsequent informational mailings.

## 1997 VII$^{th}$ PASPCR Meeting Site

**by Vincent Hearing / Richard King**

The VII$^{th}$ Annual Meeting of the **PASPCR** will be held in Providence, RI in June, 1997 with Walter C. Quevedo, Jr. as the Organizer, with Harold Swartz as the co-chair of the Organizing Committee. Further information will be forthcoming for that meeting as it becomes available.

## PASPCR Secretary / Treasurer's Report : by Richard A King

Following is a synopsis of the PASPCR Council Meeting held by teleconference on October 27, 1994 . . .

Hearing opened the meeting and a quorum was declared present. The minutes of the June 26, 1994, Council meeting were accepted. King gave the treasurer's report. There were 137 current members of the PASPCR including 111 renewal and 26 new memberships for 1994. The travel award stipends for the 1994 meeting totaled $4,414. The total amount of travel stipends over the period 1989 - 1994 is $17,489.

Frost-Mason gave the Nominating Committee report. The 1996 elections will include the offices of President and Secretary-Treasurer as well as 3 Council members. Townsend gave the Publication Committee report. He stated that there were four responses to the postcards that were mailed to the members requesting information for the last newsletter, and the total cost for this was $30. Pawelek gave the Membership Committee report. A draft of a PASPCR brochure would be available soon. Frost-Mason for the Awards Committee invited all members of the Council to submit nominations for 1996 Honorary Membership and Career Achievement Award.

Frost-Mason reviewed the preparations for the 1995 PASPCR meeting to be held Kansas City. The first announcement has been distributed to the PASPCR, ESPCR, JSPCR and other individuals and societies. Further information will be available in the December newsletter. Bowers reviewed the preparation for the 1996 IPCC meeting to be held in Anaheim. The planning committee will meet in January, 1995, and arrangements will be made to include the representatives from the various regional societies. R. Boissy and S. Orlow would be the PASPCR representatives to the 1996 IPCC Program Committee and S. Frost-Mason and R. King would be the PASPCR representative to the 1996 IPCC International Planning Committee. The scientific agenda will include such topics as molecular biology; photo biology; melanin, society and economy; melanoma, melanin and pigmentation diseases and comparative biology. Financial support is being developed for this meeting. Hearing noted that W. Quevedo and H. Swartz have expressed interest in hosting the 1997 meeting in Providence, Rhode Island, and D. Norris has suggested that he would host the meeting in Denver in 1998.

Hearing presented a proposed Rule & Regulation for guidelines for PASPCR sponsorship of outside scientific meetings: 1) that the meeting under consideration is in full accordance with the aims and scope of the PASPCR and is intended to foster scientific goals; 2) that the meeting is a bonafide scientific meeting with an independent program committee; 3) that the meeting will be held at a satisfactory venue and the date that does not compete with PASPCR sponsored events, and 4) that the meeting organizers have sufficient financial resources to host the meeting. This was unanimously accepted.

A Rule & Regulation for Emeritus Membership was proposed: (1) A member is eligible for Emeritus Membership if he/she is fully retired and was an active regular member of the PASPCR for the proceeding 5 years. (2) the application must be submitted to and approved by the council. (3) the Emeritus Members will have full voting rights and will be eligible for elected office and the various appropriate PASPCR awards and (4) the Emeritus members will pay annual dues that represent 25% of the regular annual dues. This was unanimously accepted.

An amendment to Rule & Regulation #4 that would detail the mechanism for selecting the Young Investigator Awards was proposed: (1) a notice of the Young Investigator Awards be included in the call for abstracts; (2) the nomination for an award will be made at the time of abstract submission; (3) the nominees must present their abstract at the annual meeting to be eligible for an award; (4) the selection of the award will be made by anonymous committee appointed by the secretary-treasurer; and (5) that the Young Investigator Award will be announced at the membership business meeting of the PASPCR. There was concern that this amendment would limit the possibility of giving an award to a young investigator who had not applied for it but had given an outstanding presentation at the annual meeting. There was also concern about the mechanism that would notify all potential candidates of the Young Investigator Award. Frost-Mason suggested the Rule & Regulation could be approved on a provisional basis for a one year trial, and this was unanimously accepted.

The minutes have been prepared by R. King, Secretary-Treasurer

## Meeting Report : by Koichiro Kameyama

### 9th Annual Meeting of the Japanese Society for Pigment Cell Research
### Tokyo, Japan December 9-10, 1994

The 9th JSPCR meeting was held at the Nihon Kaiun Club in Tokyo. The meeting was organized by the Department of Dermatology, Nihon University School of Medicine with Prof. T. Morishima as Chairman and Dr. Z. Yamaguchi as Secretary. The meeting was filled with so much hospitality, and all participants enjoyed not only an exciting meeting but also a gorgeous buffet. The meeting was composed by one special lecture given by Prof. K. Jimbow, three seminars and 38 papers.

**Special Lecture "Melanogenesis as a cascade of events"**

Dr. K. Jimbow discussed the interaction of melanosomal glycoproteins such as tyrosinase, TRP1, TRP2 and lysosome-associated membrane protein-1 (LAMP1) in the melanogenic process. He mentioned that LAMP1 exists in the membrane of melanosomes and lysosomes. UV exposure upregulates tyrosinase, TRP1 and LAMP1. Transfection of either tyrosinase or TRP1 does not increase the expression of LAMP1 in fibroblasts, whereas cotransfection of both tyrosinase and TRP1 increases the expression of LAMP1 in fibroblasts. He also mentioned that transfection of tyrosinase only in COS cells caused the vacuolation in the cells, but cotransfection of tyrosinase and TRP1 causes melanin production without vacuolation. Therefore he mentioned the possibility that TRP1 may be involved in the prevention of programmed cell death of melanocytes during melanogenesis through upregulation of LAMP1. He also mentioned the possibility that calnexin was a chaperon necessary for the proper folding of melanosomal glycoproteins.

**Research Seminar 'Recent advances in melanin research made by gene technology"**

Dr. S. Shibahara summarized the recent findings concerning the possible involvement of two novel proteins in the pigment cell specific transcription of the tyrosinase family genes: neurofibromin, a gene product responsible for neurofibromatosis type I (NF1) and a human homologue of the mouse gene associated with microphthalmia. He mentioned that NF1 is a tumor suppressor gene located on chromosome 17. He checked the effect of NF1 gene on MeWo cells which lack the NF1 gene. The results were that the NF1 gene activates the tyrosinase gene promoter. Then he mentioned that microphthalmia-associated transcription factor (MITF) increases the expression of the tyrosinase gene, and MITF is a key regulator for melanocyte-specific transcription of the tyrosinase gene. After his lecture, there was one interesting question which asked about mutations of the NF1 gene that cause NF1 associated with cafe au lait spots where melanin is increased. If NF1 gene activates the tyrosinase gene promoter, patients with NF1 should have depigmented spots on the skin. Dr. Shibahara answered that it was a really interesting question but to answer it, further study will be necessary.

**Melanin**

The meaning of 5,6-dihydroxyindole-2-carboxylic acid (DHICA) derived melanin has been in focus. The meaning has been estimated to concern the color of melanin or quality of melanin. Dr. H. Ozeki in Prof. S. Ito's group made a comparative study of melanins in various color mutants of mice by spectrophotometric and HPLC analysis. He studied the various coat color mutants of congenic mice: black, agouti, viable yellow, brown, albino, dilute black and pink-eyed black by the method of HPLC analysis using pyrrole-2,3,5-tricarboxylic acid (PTCA) and aminohydroxyphenylalanine (AHP) and various spectrophotometric assays. At first he compared the amounts of total melanin analyzed by HPLC method and spectrophotometric assay. The results showed that: 1) total melanin content analyzed by spectrophotometric assay correlated well with the melanin content calculated from PTCA and AHP methods; 2) viable yellow pigment was much more soluble in strong alkali than black eumelanin; 3) brown eumelanin was much more soluble in strong alkali than black eumelanin; 4) comparison of PTCA/total eumelanin ratios indicates the percentage content of DHICA-derived melanin in eumelanin, and the percentages are similar between black eumelanin and brown eumelanin, suggesting that the alkali solubility of brown eumelanin is not due to differences in the carboxy content but are due to differences in the molecular weight, i.e. the degree of polymerization of melanin. This result is further supported by the fact that the total eumelanin/total eumelanin + pheomelanin ratio was about half that of black melanin.

**Melanin metabolism**

Dr. K. Wakamatsu in Prof. Ito's group studied which is the better marker of melanin-related metabolism, 5-S-cysteinylDOPA (5-S-CD) or 6-hydroxy-5-methoxyindole-2-carboxylic acid (6H5MI2C)

as markers of melanoma progression. At first he checked the seasonal variation of serum 5-S-CD and 6H5MI2C values in 10 healthy Japanese every two months for two years. The results showed that 5-S-CD levels were higher in early summer and lower in early winter. However, the difference in the average levels (4 nmol/L in the two markers) was about two fold and no individual values exceeded the upper limit of the normal value, 10 nmol/L. A significant correlation ($p<0.02$) was observed between 5-S-CD and solar irradiation, and 6H5MI2C levels showed smaller variation as compared with 5-S-CD levels. No correlation was observed between 6H5MI2C levels and solar radiation. They also checked the stability of those two markers in whole blood and serum samples. 6H5MI2C was much more unstable than 5-S-CD in whole blood and serum at room temperature. They also found that serum 5-S-CD levels elevated significantly earlier and reflected melanoma progression better than 6H5MI2C and the clinical detection. On the other hand, serum 6H5MI2C did not increase until the final stage in most patients. Dr. Jimbow commented that 6H5MI2C is a better marker than 5-S-CD for melanoma patients in Canada, and 5-S-CD does not reflect melanogenesis since the level of 5-S-CD in patients with albinism showed normal levels.

**Tyrosinase Related Proteins**

Dr. K. Urabe in Dr. Hearing's group cloned a cDNA encoding TRP2 from murine melanocytes using RT-PCR and studied its catalytic activity by transfection technique. Furthermore he generated an expression vector that contains the slaty mutation and examined the effects of this on the catalytic function of TRP2. He checked the effect on transfected cells and confirmed that the ability of murine TRP2 to function as DOPAchrome tautomerase and to demonstrate that the slaty mutation dramatically decreases that enzyme function. He also commented that the reason why slaty mice do not show black color which reflects DHI-derived melanin is that DHICA may be necessary for the polymerization of melanin.

Dr. H. Kondoh in Dr. Mishima's group checked the effect of transfection of TRP2 on human melanotic melanoma Ihara cells having low DOPAchrome tautomerase activity. He obtained melanoma cells which possess various degrees of DOPAchrome tautomerase activity, and compared the activity of DOPAchrome tautomerase, tyrosinase and melanogenesis among obtained transformants and parental cells. The results showed that the clones with higher DOPAchrome tautomerase/tyrosinase activity ratio contained higher amounts of DHICA-melanin, and increased melanogenesis was observed in clones having high DOPAchrome tautomerase activity with the same level of tyrosinase activity. From these findings he assumes that the modulation of eumelanin production is mainly performed in the DHICA-pathway which is regulated in turn by DOPAchrome tautomerase activity within pigment cells which possess the same level of tyrosinase activity.

**Melanogenic Inhibitor**

Dr. K. Kameyama reported the effect of oil-soluble licorice extract (P-TH) which contains 20% grablidin on melanogenesis. P-TH is a mixture of flavonoids and unknown substances. $10^{-3}$ mg/ml or $10^{-4}$ mg/ml licorice extract suppressed melanin formation 20% or 69% respectively by purified tyrosinase. P-TH also suppressed melanin formation on cultured human melanoma Ihara cells, mouse B16 F10 cells and transformed murine melanocyte melan-a cells. Unexpectedly P-TH increased TRP1 activity (DHICA oxidase) approximately 20% in B16 F10 cells, but decreased approximately 70% of both TRP2 activity and spontaneous conversion of DOPAchrome to 5,6-dihydroxyindole on Ihara cells. To know the effect of P-TH on those melanogenic enzymes, radioimmunoprecipitation was performed. $10^{-2}$ mg/ml P-TH suppressed the synthesis rates of highly glycosylated melanosomal glycoproteins tyrosinase, TRP1 and TRP2, but did not suppress the melanosomal matrix Pmel17/silver locus protein. Furthermore the band of tyrosinase, TRP1 and TRP2 on immunoprecipitation was shifted to lower molecular weight. These findings suggest that P-TH suppressed the synthesis rate of those tyrosinase gene family members by inhibition of glycosylation. P-TH was effective on 20 out of 36 patients with hyperpigmented diseases such as chloasma. These findings clearly indicated that P-TH application can be useful for patients with hyperpigmented diseases, and the reason why P-TH suppressed melanogenesis at several steps is that P-TH is a mixture of flavonoids.

**Cytokines**

Dr. Y. Yada of Dr. Imokawa's group studied the effect of fibroblast-derived factors on the proliferation of human melanocytes (HMC). DNA synthesis of HMC was significantly stimulated by human fibroblast (HFB) conditioned medium. The stimulatory effect was significantly higher in the conditioned medium from old age-derived fibroblasts (OFB) than that from young age fibroblasts (YFB). Analysis of released factors in the conditioned medium revealed that stem cell factor (SCF) significantly increased in OFB conditioned medium as compared to YFB. In contrast, basic fibroblast growth factor (bFGF) did not differ. In addition, the secretion of hepatocyte growth factor (HGF) was

markedly increased when IL-1 was added to the culture medium. The DNA synthesis rates of HMC were decreased when anti-HGF, SCF and bFGF antibodies were added to the conditioned medium. Therefore they assume that SCF and HGF may be involved in cutaneous pigmentation during the aging process. There was a question regarding whether the effect of those cytokines on HMC DNA synthesis increased cell number or melanin production. The answer is that the number of HMC was much increased and the melanin production was slightly decreased.

## Members in the News

**Kowichi Jimbow**, presented the keynote lecture at the 9th Annual Meeting of the JSPCR (cf Meeting Report above); the title of his lecture was "Melanogenesis as a Cascade of Events"

**Yutaka Mishima**, his family and colleagues, survived the recent devastating earthquake that hit Kobe so hard. All the coworkers at Prof. Mishima's Institute are safe, as are our colleagues at the Dermatology Department at Kobe University, although there has been serious damage to their homes and research facilities. At the suggestion of Drs. King and Quevedo, we have offered the assistance of the PASPCR to help them resupply scientific resources that may have been lost and further information will be forthcoming in a future Newsletter.

## Positions - Wanted and Available :

Opportunity available to do graduate studies towards a doctoral degree at the University of Cincinnati College of Medicine. Graduate program is through the Department of Cell Biology, Neurobiology, & Anatomy. Dissertation project would focus on molecular biology of the melanocyte physiology and pigmentary diseases. For information contact: Raymond E. Boissy, Ph.D., Department of Dermatology, University of Cincinnati College of Medicine, 231 Bethesda Avenue ML-592, Cincinnati, Ohio 45267-0592; (513)558-6242 [TEL]; (513)558-0198 [FAX]; boissyre@ucbeh.san.uc.edu [eMAIL].

## INTERPIG Update :

The INTERPIG database is underway! Entries have been drifting in from members of the ESPCR, JSPCR and PASPCR listing their various reagents, cDNAs, antibodies, cell lines and other research materials that are useful to pigment cell researchers. A copy of the database entry sheet is enclosed again in this Newsletter and please take a moment to fill out that form with any items that you have developed over the past years that would be useful to other researchers in the field. Later this year we will be providing printouts of those items entered - the usefulness of this database depends entirely upon the willingness of all of us to take the time to input our data into the database. Kudos to Lynn Lamoreux for being the first from our Society to submit a data entry form, and to Kowichi Jimbow and Vincent Hearing who have followed suit. Please take a moment to fill out your entries today. Mail or FAX them to V Hearing at the address listed on the form.

## Bibliography :

The Bibliography published in this issue covers the period November, 1994 through January, 1995. If you notice a paper that was not detected by this search that should be included, please send it to us and we will include it in the next issue. We have attempted to highlight any publications which include a member of the PASPCR with a star.

### MELANINS, MELANOGENS & MELANOGENESIS


Cheng J, Moss SC, Eisner M, Zschack P: X-ray characterization of melanins .1. Pigm Cell Res 7:255-262 (1994).

Eller MS, Yaar M, Gilchrest BA: DNA damage and melanogenesis. Nature 372:413-414 (1994).

Goulson D: Determination of larval melanization in the moth, *Mamestra brassicae*, and the role of melanin in thermoregulation. Heredity 73:471-479 (1994).

Howells L, Godfrey M, Sauer MJ: Melanin as an adsorbent for drug residues. Analyst 119:2691-2693 (1994).

Ikeda H, Pastuszko A, Ikegaki N, Kennett RH, Wilson DF: 3,4-dihydroxyphenylalanine (DOPA) metabolism and retinoic acid induced differentiation in human neuroblastoma. Neurochem Res 19:1487-1494 (1994).

Jimbow K, Luo D, Chen H, Hara H, Lee MH: Coordinated mRNA and protein expression of human LAMP-1 in induction of melanogenesis after UV-B exposure and co-transfection of human tyrosinase and TRP-1 cDNAs. Pigm Cell Res 7:311-319 (1994).

Kristensen S, Orsteen AL, Sande SA, Tonnesen HH: Photoreactivity of biologically active compounds .7. Interaction of antimalarial drugs with melanin *in vitro* as part of phototoxicity screening. J Photochem Photobiol B-Biol 26:87-95 (1994).

Lemaire C, Damhaut P, Plenevaux A, Comar D: Enantioselective synthesis of 6-[$F^{18}$]-fluoro-L- dopa from no-carrier-added fluorine-28-fluoride. J Nucl Med 35:1996-2002 (1994).

Marsden CD: Problems with long-term levodopa therapy for Parkinson's disease. Clin Neuropharmacol 17:S32-S44 (1994).

Matsuda H, Nakamura S, Kubo M: Studies of cuticle drugs from natural sources .2. Inhibitory effects of Prunus plants on melanin biosynthesis. Biol Pharm Bull 17:1417-1420 (1994).

Nakonieczna L, Przychodzen W, Chimiak A: A new convenient route for the synthesis of DOPA peptides. Liebigs Ann Chem 1055-1058 (1994).

Nappi AJ, Vass E: The effects of glutathione and ascorbic acid on the oxidations of 6-hydroxydopa and 6-hydroxydopamine. Bba-Gen Subjects 1201:498-504 (1994).

Neira WD, Sanchez V, Mena MA, Deyebenes JG: The effects of cisapride on plasma L-Dopa levels and clinical response in Parkinson's disease. Movement Disord 10:66-70 (1995).

Nygaard TG, Waran SP, Levine RA, Naini AB, Chutorian AM: Dopa-responsive dystonia simulating cerebral palsy. Pediat Neurol 11:236-240 (1994).

Owens DGC, Harrisonread PE, Johnstone EC: L-dopa helps positive but not negative features of neuroleptic-insensitive chronic schizophrenia. J Psychopharmacol 8:204-212 (1994).

Sato S, Koitbashi T, Koshiro A: Pharmacokinetic and pharmacodynamic studies of L-dopa in rats .1. Pharmacokinetic analysis of L-dopa in rat plasma and striatum. Biol Pharm Bull 17:1616-1621 (1994).

Sawle GV, Marsden CD: Dopa-responsive dystonia. Ann Neurol 36:801-802 (1994).

Shen J, Hirsh J: cis-regulatory sequences responsible for alternative splicing of the Drosophila dopa decarboxylase gene. Mol Cell Biol 14:7385-7393 (1994).

Siegfried CJ, Hendricks RL: Melanin can deplete immunosuppressive substances from the aqueous humor. Curr Eye Res 13:869-873 (1994).

Skuza G, Rogoz Z, Quack G, Danysz W: Memantine, amantadine, and L-deprenyl potentiate the action of L-DOPA in monoamine-depleted rats. J Neural Transm-Gen Sect 98:57-67 (1994).

Spencer JPE, Jenner A, Aruoma OI, Evans PJ, Kaur H, Dexter DT, Jenner P, Lees AJ, Marsden DC, Halliwell B: Intense oxidative DNA damage promoted by L-DOPA and its metabolites implications for neurodegenerative disease. FEBS Lett 353:246-250 (1994).

Swartz HM: Workshop Report - Biophysics of melanin and informal group on the characterization of neuromelanin. Pigm Cell Res 7:244(1994).

Tobin D, Quinn AG, Ito SS, Thody AJ: The presence of tyrosinase and related proteins in human epidermis and their relationship to melanin type. Pigm Cell Res 7:204-209 (1994).

Wang YL, Casadevall A: Growth of *Cryptococcus neoformans* in presence of L-dopa decreases its susceptibility to amphotericin B. Antimicrob Agents Chemother 38:2648-2650 (1994).


### MELANOCYTES & KERATINOCYTES


Abdel-Malek Z, Swope V, Smalara D, Babcock G, Dawes S: Analysis of the UV-induced melanogenesis and growth arrest of human melanocytes. Pigm Cell Res 7:326-332 (1994).

Barnhill RL, Aguiar M, Cohen C, Kang SW, Kennedy J, Schmidt B, Sober AJ, Solomon AR: Congenital melanocytic nevi and DNA content - An analysis by flow and image cytometry. Cancer 74:2935-2943 (1994).

Baynash AG, Hosoda K, Giaid A, Richardson JA, Emoto N, Hammer RE, Yanagisawa M: Interaction of endothelin-3 with endothelin-B receptor is essential for development of epidermal melanocytes and enteric neurons. Cell 79:1277-1285 (1994).

Boyd AS, Rapini RP: Acral melanocytic neoplasms: A histologic analysis of 158 lesions. J Am Acad Dermatol 31:740-745 (1994).
Buffey JA, Messenger AG, Taylor M, Ashcroft ATT, Westgate GE, MacNeil S: Extracellular matrix derived from hair and skin fibroblasts stimulates human skin melanocyte tyrosinase activity. Br J Dermatol 131:836-842 (1994).
Cajal SRY, Missero C, Marchetti E, Dotto GP: Dermal fibroblasts tumor suppression of ras-transformed keratinocytes is associated with induction of squamous cell differentiation. Am J Pathol 145:846-855 (1994).
Cussac C, Rapp M, Mounetou E, Madelmont JC, Maurizis JC, Godeneche D, Dupuy JM, Sauzieres J, Baudry JP, Veyre A: Enhancement by O-6-benzyl-N-acetylguanosine derivatives of chloroethylnitrosourea antitumor action in chloroethylnitrosourea-resistant human malignant melanocytes. J Pharmacol Exp Ther 271:1353-1358 (1994).
Ekmehag B, Persson B, Rorsman P, Rorsman H: Demonstration of voltage-dependent and TTX-sensitive Na+-channels in human melanocytes. Pigm Cell Res 7:333-338 (1994).
Hara M, Yaar M, Tang AM, Eller MS, Reenstra W, Gilchrest BA: Role of integrins in melanocyte attachment and dendricity. J Cell Sci 107:2739-2748 (1994).
Harrison SL, Maclennan R, Speare R, Wronski I: Sun exposure and melanocytic naevi in young Australian children. Lancet 344:1529-1532 (1994).
Hemesath TJ, Steingrimsson E, Mcgill G, Hansen MJ, Vaught J, Hodgkinson CA, Arnheiter H, Copeland NG, Jenkins NA, Fisher DE: Microphthalmia, a critical factor in melanocyte development, defines a discrete transcription factor family. Gene Develop 8:2770-2780 (1994).
Hunt G, Donatien PD, Lunec J, Todd C, Kyne S, Thody AJ: Cultured human melanocytes respond to MSH peptides and ACTH. Pigm Cell Res 7:217-221 (1994).
Jayawickreme CK, Quillan JM, Graminski GF, Lerner MR: Discovery and structure-function analysis of α-melanocyte-stimulating hormone antagonists. J Biol Chem 269:29846-29854 (1994).
Lu DS, Willard D, Patel IR, Kadwell S, Overton L, Kost T, Luther M, Chen WB, Woychik RP, Wilkison WO, Cone RD: Agouti protein is an antagonist of the melanocyte- stimulating-hormone receptor. Nature 371:799-802 (1994).
Motohashi H, Hozawa K, Oshima T, Takeuchi T, Takasaka T: Dysgenesis of melanocytes and cochlear dysfunction in mutant microphthalmia (mi) mice. Hear Res 80:10-20 (1994).
Norris DA, Horikawa T, Morelli JG: Melanocyte destruction and repopulation in vitiligo. Pigm Cell Res 7:193-203 (1994).
Raghavan D, Zalcberg JR, Grygiel JJ, Teriana N, Cox KM, Mccarthy W, Flynn M: Multiple, atypical nevi: A cutaneous marker of germ cell tumors. J Clin Oncol 12:2284-2287 (1994).
Saitoh K, Takahashi H, Sawada N, Parsons PG: Detection of the c-met proto-oncogene product in normal skin and tumours of melanocytic origin. J Pathol 174:191-199 (1994).
Sauer MJ, Anderson SPL: In vitro and in vivo studies of drug residue accumulation in pigmented tissues. Analyst 119:2553-2556 (1994).
Schallreuter KU, Buttner G, Pittelkow MR, Wood JM, Swanson NN, Korner C: Cytotoxicity of 6-biopterin to human melanocytes. Biochem Biophys Res Commun 204:43-48 (1994).
Shih IM, Elder DE, Hsu MY, Herlyn M: Regulation of Mel-CAM/MUC18 expression on melanocytes of different stages of tumor progression by normal keratinocytes. Am J Pathol 145:837-845 (1994).
Vink J, Dekker SK, Vanleeuwen RL, Vermeer BJ, Bruijn JA, Byers HR: Role of beta 1 integrins in cell spreading and migration of human nevomelanocytes and dysplastic nevi cells on collagen type IV and laminin. Pigm Cell Res 7:339-347 (1994).

## MELANOMA & METASTASIS

Abdelwahab Z, Li WP, Osanto S, Darrow TL, Hessling J, Vervaert CE, Burrascano M, Barber J, Seigler HF: Transduction of human melanoma cells with interleukin-2 gene reduces tumorigenicity and enhances host antitumor immunity: A nude mouse model. Cell Immunol 159:26-39 (1994).
Abels C, Heil P, Dellian M, Kuhnle GEH, Baumgartner R, Goetz AE: *In vivo* kinetics and spectra of 5-aminolaevulinic acid- induced fluorescence in an amelanotic melanoma of the hamster. Br J Cancer 70:826-833 (1994).
Abernethy JL, Soyer HP, Kerl H, Jorizzo JL, White WL: Epidermotropic metastatic malignant melanoma simulating melanoma *in situ* - A report of 10 examples from two patients. Am J Surg Pathol 18:1140-1149 (1994).
Aitken JF, Duffy DL, Green A, Youl P, Maclennan R, Martin NG: Heterogeneity of melanoma risk in families of melanoma patients. Am J Epidemiol 140:961-973 (1994).
Amarcostesec A, Godelaine D, Stockert E, Vanderbruggen P, Beaufay H, Chen YT: The tumor protein MAGE-1 is located in the cytosol of human melanoma cells. Biochem Biophys Res Commun 204:710-715 (1994).
Ang KK, Peters LJ, Weber RS, Morrison WH, Frankenthaler RA, Garden AS, Goepfert H, Ha CS, Byers RM: Postoperative radiotherapy for cutaneous melanoma of the head and neck region. Int J Radiat Oncol Biol Phys 30:795-798 (1994).
Barnhill RL, Busam KJ, Berwick M, Blessing K, Cochran AJ, Elder DE, Fandrey K, Karaoli T, White WL: Tumour vascularity is not a prognostic factor for cutaneous melanoma. Lancet 344:1237-1238 (1994).
Battistutta D, Palmer J, Walters M, Walker G, Nancarrow D, Hayward N: Incidence of familial melanoma and MLM2 gene. Lancet 344:1607-1608 (1994).
Bennett DC, Holmes A, Devlin L, Hart IR: Experimental metastasis and differentiation of murine melanoma cells: Actions and interactions of factors affecting different intracellular signalling pathways. Clin Exp Metastasis 12:385-397 (1994).

Bergman W, Gruis NA, Sandkuijl LA, Frants RR: Genetics of seven Dutch familial atypical multiple mole melanoma syndrome families: A review of linkage results including chromosomes 1 and 9. J Invest Dermatol 103:S122-S125 (1994).
Bowman CB: Cutaneous malignant melanoma with diffuse intraocular metastases (vol 112, pg 1213, 1994). Arch Ophthalmol 112:1464(1994).
Buzaid AC, Legha SS: Combination of chemotherapy with interleukin-2 and interferon-α for the treatment of advanced melanoma. Semin Oncol 21:23-28 (1994).
Buzaid AC, Legha SS, Balch CM, Ross M, Ring S, Plager C, Papadopoulos NE, Elnaggar AK, Benjamin RS: Pilot study of preoperative chemotherapy with cisplatin, vinblastine, and dacarbazine in patients with local-regional recurrence of melanoma. Cancer 74:2476-2482 (1994).
Cannonalbright LA, Meyer LJ, Goldgar DE, Lewis CM, Mcwhorter WP, Jost M, Harrison D, Anderson DE, Zone JJ, Skolnick MH: Penetrance and expressivity of the chromosome 9p melanoma susceptibility locus (MLM). Cancer Res 54:6041-6044 (1994).
Carey WP, Thompson CJ, Synnestvedt M, Guerry D, Halpern A, Schultz D, Elder DE: Dysplastic nevi as a melanoma risk factor in patients with familial melanoma. Cancer 74:3118-3125 (1994).
Castelli C, Storkus WJ, Maeurer MJ, Martin DM, Huang EC, Pramanik BN, Nagabhushan TL, Parmiani G, Lotze MT: Mass spectrometric identification of a naturally processed melanoma peptide recognized by CD8(+) cytotoxic T lymphocytes. J Exp Med 181:363-368 (1995).
Chang ES, Wick MR, Swanson PE, Dehner LP: Metastatic malignant melanoma with "rhabdoid" features. Am J Clin Pathol 102:426-431 (1994).
Chung SJ: Formula expressing a relationship among lesion thickness and time after diagnosis and survival probability in patients with malignant melanoma. Int J Biomed Comput 37:171-180 (1994).
Cohen IR, Murdoch AD, Naso MF, Marchetti D, Berd D, Iozzo RV: Abnormal expression of perlecan proteoglycan in metastatic melanomas. Cancer Res 54:5771-5774 (1994).
Cole DJ, Weil DP, Shamamian P, Rivoltini L, Kawakami Y, Topalian S, Jennings C, Eliyahu S, Rosenberg SA, Nishimura MI: Identification of MART-1-specific T-cell receptors: T cells utilizing distinct T-cell receptor variable and joining regions recognize the same tumor epitope. Cancer Res 54:5265-5268 (1994).
Coleman K, Vandiest PJ, Baak JPA, Mullaney J: Syntactic structure analysis in uveal melanomas. Br J Ophthalmol 78:871-874 (1994).
Coucke P, Baramova E, Leprince P, Depauwgillet MC, Foidart JM, Bassleer R: Metalloproteinases and serine proteases activities in mixed spheroids of mouse B16 melanoma cells and fibroblasts. Int J Oncol 5:1125-1130 (1994).
Cygler J, Klassen NV, Ross CK, Bichay TJ, Raaphorst GP: The survival of aerobic and anoxic human glioma and melanoma cells after irradiation at ultrahigh and clinical dose rates. Radiat Res 140:79-84 (1994).
Degiovanni C, Nicoletti G, Sensi M, Santoni A, Palmieri G, Landuzzi L, Nanni P, Lollini PL: H-2K$^b$ and H-2D$^b$ gene transfections in B16 melanoma differently affect non-immunological properties relevant to the metastatic process. Involvement of integrin molecules. Int J Cancer 59:269-274 (1994).
Dumont JA, Bitonti AJ: Modulation of human melanoma cell metastasis and adhesion may involve integrin phosphorylation mediated through protein kinase C. Biochem Biophys Res Commun 204:264-272 (1994).
Eaves FF, Burstein FD, Hudgins R, Cohen SR, Papciack M: Primary temporal melanoma without diffuse leptomeningeal involvement: A variant of neurocutaneous melanosis. Plast Reconstr Surg 95:133-135 (1995).
Falkson CI, Falkson G, Falkson HC: Phase II trial of fotemustine in patients with metastatic malignant melanoma. Invest New Drugs 12:251-254 (1994).
Fierlbeck G, Schreiner T, Schaber B, Walser A, Rassner G: Neutralizing interferon-β antibodies in melanoma patients treated with recombinant and natural interferon-β. Cancer Immunol Immunother 39:263-268 (1994).
Franceschi S, Bidoli E, Prati S, Fascioli S, Lavecchia C: Mortality from skin melanoma in Italy and Friuli-Venezia Giulia Region, 1970-1989. Tumori 80:251-256 (1994).
Fuller GN, Spies JM, Pollard JD, Mcleod JG: Demyelinating neuropathies triggered by melanoma immunotherapy. Neurology 44:2404-2405 (1994).
Fusaro RM, Lynch HT: The familial atypical multiple-mole melanoma syndrome and its associated risk for pancreatic cancer. Int J Pancreatol 16:216-221 (1994).
Girod SC, Groth W, Junk M, Gerlach KL: p53 and PCNA expression in malignant melanomas of the head and neck. Pigm Cell Res 7:354-357 (1994).
Gordon CM, Lloyd KO: Endocytosis and recycling of gangliosides in a human melanoma cell line: Inhibitory effect of Brefeldin A and monensin. Arch Biochem Biophys 315:339-344 (1994).
Green A, Martin N, Pfitzner J, Orourke M, Knight N: Computer image analysis in the diagnosis of melanoma. J Am Acad Dermatol 31:958-964 (1994).
Guleria AS, Yang JC, Topalian SL, Weber JS, Parkinson DR, Macfarlane MP, White RL, Steinberg SM, White DE, Einhorn JH, Seipp CA, Austin HA, Rosenberg SA, Schwartzentruber DJ: Renal dysfunction associated with the administration of high-dose interleukin-2 in 199 consecutive patients with metastatic melanoma or renal carcinoma. J Clin Oncol 12:2714-2722 (1994).
Gyorfi T, Herlyn M: Melanocyte and melanoma cell lines. Atlas of human tumor cell lin 413-428 (1994).
Halpern SM, Munro DD: Tickborne melanoma? Br Med J 309:1693(1994).
Hatton DH, Mitchell DL, Strickland PT, Johnson RT: Enhanced photoproduct repair: Its role in the DNA damage-resistance phenotype of human malignant melanoma cells. Cancer Res 55:181-189 (1995).
Helfand SC, Soergel SA, Donner RL, Gan J, Hank JA, Lindstrom MJ, Sondel PM: Potential to involve multiple effector cells with human recombinant interleukin-2 and antiganglioside monoclonal antibodies in a canine malignant melanoma immunotherapy model. J Immunother 16:188-197 (1994).

Hellstrand K, Naredi P, Lindner P, Lundholm K, Rudenstam CM, Hermodsson S, Asztely M, Hafstrom L: Histamine in immunotherapy of advanced melanoma: A pilot study. Cancer Immunol Immunother 39:416-419 (1994).
Hersh EM, Akporiaye E, Harris D, Stopeck AT, Unger EC, Warneke JA: Phase I study of immunotherapy of malignant melanoma by direct gene transfer. Hum Gene Ther 5:1371-1384 (1994).
Heuillet E, Bouaiche Z, Menager J, Dugay P, Munoz N, Dubois H, Amiranoff B, Crespo A, Lavayre J, Blanchard JC, Doble A: The human galanin receptor: Ligand-binding and functional characteristics in the Bowes melanoma cell line. Eur J Pharmacol-Molec Pharm 269:139-147 (1994).
Houghton PJ, Photiou A, Uddin S, Shah P, Browning M, Jackson SJ, Retsas S: Activity of extracts of Kigelia pinnata against melanoma and renal carcinoma cell lines. Planta Med 60:430-433 (1994).
House NS, Fedok F, Maloney ME, Helm KF: Malignant melanoma with clinical and histologic features of Merkel cell carcinoma. J Am Acad Dermatol 31:839-842 (1994).
Inohara H, Raz A: Effects of natural complex carbohydrate (citrus pectin) on murine melanoma cell properties related to galectin-3 functions. Glycoconjugate J 11:527-532 (1994).
Kaipainen A, Vlaykova T, Hatva E, Bohling T, Jekunen A, Pyrhonen S, Alitalo K: Enhanced expression of the tie receptor tyrosine kinase messenger RNA in the vascular endothelium of metastatic melanomas. Cancer Res 54:6571-6577 (1994).
Kamb A: Sunlight and melanoma: An answer from MTS1 (p16) - Response. Science 267:16(1995).
Karakousis CP, Driscoll DL: Groin dissection in malignant melanoma. Br J Surg 81:1771-1774 (1994).
Kobayashi T, Hayashi A, Uraishikou A, Tajima S, Nishikawa T: A novel gelatinolytic enzyme secreted by amelanotic cells isolated from B16 melanoma cell line. Cancer Lett 85:165-169 (1994).
Krementz ET, Carter RD, Sutherland CM, Muchmore JH, Ryan RF, Creech O: Regional chemotherapy for melanoma - A 35-year experience. Ann Surg 220:520-535 (1994).
Kroumpouzos G, Eberle J, Garbe C, Orfanos CE: P53 mutation and c-fos overexpression are associated with detection of the antigen VLA-2 in human melanoma cell lines. Pigm Cell Res 7:348-353 (1994).
Krugerkrasagakes S, Krasagakis K, Garbe C, Schmitt E, Huls C, Blankenstein T, Diamantstein T: Expression of interleukin 10 in human melanoma. Br J Cancer 70:1182-1185 (1994).
Larsson BS: Workshop Report - Melanoma treatment. Pigm Cell Res 7:243(1994).
Leunig M, Leunig A, Lankes P, Goetz AE: Evaluation of photodynamic therapy-induced heating of hamster melanoma and its effect on local tumour eradication (vol 10, pg 297, 1994). Int J Hyperthermia 10:867(1994).
Link EM, Michalowski AS, Rosch F: At-211-methylene blue in targeted radiotherapy of disseminated melanoma. Pigm Cell Res 7:358-362 (1994).
Livingston PO, Adluri S, Helling F, Yao TJ, Kensil CR, Newman MJ, Marciani D: Phase 1 trial of immunological adjuvant QS-21 with a GM2 ganglioside-keyhole limpet haemocyanin conjugate vaccine in patients with malignant melanoma. Vaccine 12:1275-1280 (1994).
Macgeoch C, Bishop JAN, Bataille V, Bishop DT, Frischauf AM, Meloni R, Cuzick J, Pinney E, Spurr NK: Genetic heterogeneity in familial malignant melanoma. Hum Mol Genet 3:2195-2200 (1994).
MacNeil S, Wagner M, Rennie IG: Investigation of the role of signal transduction in attachment of ocular melanoma cells to matrix proteins: Inhibition of attachment by calmodulin antagonists including tamoxifen. Clin Exp Metastasis 12:375-384 (1994).
MacNeil S, Wagner M, Rennie IG: Tamoxifen inhibition of ocular melanoma cell attachment to matrix proteins. Pigm Cell Res 7:222-226 (1994).
Maeno Y, Fujioka H, Hollingdale MR, Ockenhouse CF, Nakazawa S, Aikawa M: Ultrastructural localization of CD36 in human hepatic sinusoidal lining cells, hepatocytes, human hepatoma (HepG2-A1G) cells, and C32 amelanotic melanoma cells. Exp Parasitol 79:383-390 (1994).
Maestro R, Boiocchi M: Sunlight and melanoma: An answer from MTS1 (p16). Science 267:15-16 (1995).
Maffioli L, Chiti A, Gasparini M, Bombardieri E: Sensitivity versus specificity in melanoma imaging using iodine-123 iodobenzamide and indium-111 pentetreotide. Eur J Nucl Med 21:1366(1994).
Maffioli L, Mascheroni L, Mongioj V, Gasparini M, Baldini MT, Seregni E, Castellani MR, Cascinelli N, Buraggi GL: Scintigraphic detection of melanoma metastases with a radiolabeled benzamide ([iodine-123]-(S)-IBZM). J Nucl Med 35:1741-1747 (1994).
Manson LA: Treatment of metastatic melanoma and renal cell carcinoma with interleukin-2. JAMA 272:1327(1994).
Marshall ES, Matthews JHL, Shaw JHF, Nixon J, Tumewu P, Finlay GJ, Holdaway KM, Baguley BC: Radiosensitivity of new and established human melanoma cell lines: Comparison of [H-3]thymidine incorporation and soft agar clonogenic assays. Eur J Cancer 30A:1370-1376 (1994).
Mengeaud V, Ortonne JP: Regulation of melanogenesis induced by 5-methoxypsoralen without ultraviolet light in murine melanoma cells. Pigm Cell Res 7:245-254 (1994).
Merimsky O, Shoenfeld Y, Chaitchik S, Yecheskel G, Fishman P: Antigens and antibodies in malignant melanoma. Tumor Biol 15:188-202 (1994).
Meyer LJ, Zone JH: Genetics of cutaneous melanoma. J Invest Dermatol 103:S112-S116 (1994).
Meyskens FL, Liu PY, Tuthill RJ, Sondak VK, Fletcher WS, Jewell WR, Samlowski W, Balcerzak SP, Rector DJ, Noyes RD, Costanzi JJ: Randomized trial of vitamin A versus observation as adjuvant therapy in high-risk primary malignant melanoma: A Southwest Oncology Group Study. J Clin Oncol 12:2060-2065 (1994).
Misfeldt ML, Grimm DR: Sinclair miniature swine: An animal model of human melanoma. Vet Immunol Immunopathol 43:167-175 (1994).
Monig H, Hauschild A, Lange S, Folsch UR: Suppressed thyroid-stimulating hormone secretion in patients treated with interleukin-2 and interferon-α(2b) for metastatic melanoma. Clin Investigator 72:975-978 (1994).

Monsky WL, Lin CY, Aoyama A, Kelly T, Akiyama SK, Mueller SC, Chen WT: A potential marker protease of invasiveness, seprase, is localized on invadopodia of human malignant melanoma cells. Cancer Res 54:5702-5710 (1994).
Montgomery AMP, Mueller BM, Reisfeld RA, Taylor SM, Declerck YA: Effect of tissue inhibitor of the matrix metalloproteinases-2 expression on the growth and spontaneous metastasis of a human melanoma cell line. Cancer Res 54:5467-5473 (1994).
Morioka N, Kikumoto Y, Hoon DSB, Morton DL, Irie RF: A decapeptide (Gln-Asp-Leu-Thr-Met-Lys-Tyr-Gln-Ile-Phe) from human melanoma is recognized by CTL in melanoma patients. J Immunol 153:5650-5658 (1994).
Mould AP, Askari JA, Craig SE, Garratt AN, Clements J, Humphries MJ: Integrin α(4)β(1)-mediated melanoma cell adhesion and migration on vascular cell adhesion molecule-1 (VCAM- 1) and the alternatively spliced IIICS region of fibronectin. J Biol Chem 269:27224-27230 (1994).
Neugut AI, Kizelnikfreilich S, Ackerman C: Black-white differences in risk for cutaneous, ocular, and visceral melanomas. Am J Public Health 84:1828-1829 (1994).
Nusbaum NJ: Radiation-induced malignant melanoma: The dog that did not bark. Med Hypotheses 43:303-306 (1994).
Obrien CJ, Petersenschafer K, Papadopoulos T, Malka V: Evaluation of 107 therapeutic and elective parotidectomies for cutaneous melanoma. Am J Surg 168:400-403 (1994).
Ohira T, Ohe Y, Heike Y, Podack ER, Olsen KJ, Nishio F, Nishio M, Miyahara Y, Funayama Y, Ogasawara H, Arioka H, Kunikane H, Fukuda M, Kato H, Saijo N: *In vitro* and *in vivo* growth of B16F10 melanoma cells transfected with interleukin-4 cDNA and gene therapy with the transfectant. J Cancer Res Clin Oncol 120:631-635 (1994).
Ohta M, Nagai H, Shimizu M, Rasio D, Berd D, Mastrangelo M, Singh AD, Shields JA, Shields CL, Croce CM, Huebner K: Rarity of somatic and germline mutations of the cyclin-dependent kinase 4 inhibitor gene, CDK4I, in melanoma. Cancer Res 54:5269-5272 (1994).
Onoda JM, Kantak SS, Piechocki MP, Awad W, Chea R, Liu B, Honn KV: Inhibition of radiation-enhanced expression of integrin and metastatic potential in B16 melanoma cells by a lipoxygenase inhibitor. Radiat Res 140:410-418 (1994).
Ozisik YY, Meloni AM, Altungoz O, Peier A, Karakousis C, Leong SPL, Sandberg AA: Cytogenetic findings in 21 malignant melanomas. Cancer Genet Cytogenet 77:69-73 (1994).
Papaspyrou M, Feinendegen LE, Mullergartner HW: Preloading with L-tyrosine increases the uptake of boronophenylalanine in mouse melanoma cells. Cancer Res 54:6311-6314 (1994).
Park SS, Theodossiadis PG, Gragoudas ES: Intrascleral foreign body simulating extrascleral extension of uveal melanoma. Arch Ophthalmol 112:1620-1621 (1994).
Pettersson OA, Olsson P, Lindstrom P, Sjoberg S, Larsson BS, Carlsson J: Cellular binding of carboranylalanine and some effects of boron neutron capture - Analysis of cultured melanoma B16 cells. Acta Oncol 33:685-691 (1994).
Petty EM: Genetic risk factors for melanoma in children. J Pediatr 125:1015(1994).
Piepkorn MW: Genetic basis of susceptibility to melanoma. J Am Acad Dermatol 31:1022-1039 (1994).
Porter CW, Ganis B, Rustum Y, Wrzosek C, Kramer DL, Bergeron RJ: Collateral sensitivity of human melanoma multidrug- resistant variants to the polyamine analogue, N-1,N-11- diethylnorspermine. Cancer Res 54:5917-5924 (1994).
Prasad KN, Hernandez C, Edwardsprasad J, Nelson J, Borus T, Robinson WA: Modification of the effect of tamoxifen, cis-platin, DTIC, and interferon-α(2b) on human melanoma cells in culture by a mixture of vitamins. Nutr Cancer 22:233-245 (1994).
Prescher G, Bornfeld N, Becher R: Two subclones in a case of uveal melanoma - Relevance of monosomy 3 and multiplication of chromosome 8q. Cancer Genet Cytogenet 77:144-146 (1994).
Protti MP, Heltai S, Bellone M, Ferrarini M, Manfredi AA, Rugarli C: Constitutive expression of the heat shock protein 72 kDa in human melanoma cells. Cancer Lett 85:211-216 (1994).
Raaphorst GP, Yang DP, Ng CE: Effect of protracted mild hyperthermia on polymerase activity in a human melanoma cell line. Int J Hyperthermia 10:827-834 (1994).
Radinsky R, Beltran PJ, Tsan R, Zhang RD, Cone RD, Fidler IJ: Transcriptional induction of the melanocyte-stimulating hormone receptor in brain metastases of murine K-1735 melanoma. Cancer Res 55:141-148 (1995).
Reintgen D, Cruse CW, Wells K, Berman C, Fenske N, Glass F, Schroer K, Heller R, Ross M, Lyman G, Cox C, Rappaport D, Seigler HF, Balch C: The orderly progression of melanoma nodal metastases. Ann Surg 220:759-767 (1994).
Richardson DR, Baker E: Two saturable mechanisms of iron uptake from transferrin in human melanoma cells: The effect of transferrin concentration, chelators, and metabolic probes on transferrin and iron uptake. J Cell Physiol 161:160-168 (1994).
Rieber M, Rieber MS: Cyclin-dependent kinase 2 and cyclin A interaction with E2F are targets for tyrosine induction of B16 melanoma terminal differentiation. Cell Growth Differ 5:1339-1346 (1994).
Robinson ES, Vandeberg JL, Hubbard GB, Dooley TP: Malignant melanoma in ultraviolet irradiated laboratory opossums: Initiation in suckling young, metastasis in adults, and xenograft behavior in nude mice. Cancer Res 54:5986-5991 (1994).
Rofstad EK: Orthotopic human melanoma xenograft model systems for studies of tumour angiogenesis, pathophysiology, treatment sensitivity and metastatic pattern. Br J Cancer 70:804-812 (1994).
Ross M, Meyer JL: Management of the regional lymph nodes in malignant melanoma: Surgery, radiotherapy or observation. Lymphatic System and Cancer 28:226-234 (1994).
Sadahira Y, Yoshino T, Kojima N: B16 melanoma cell spreading on activated endothelial cells. In Vitro Cell Dev Biol-Animal 30A:648-650 (1994).

Sato T, Maguire HC, Mastrangelo MJ, Berd D: Human immune response to DNP-modified autologous cells after treatment with a DNP-conjugated melanoma vaccine. Clin Immunol Immunopathol 74:35-43 (1995).
Sawada M, Terada N, Nishizawa Y, Ito S, Wakamatsu K, Takemura K, Yamamoto T, Ozaki M, Sakamoto H, Tanizawa O: Establishment and characterization of human vaginal malignant melanoma xenotransplants. Anticancer Res 14:1477-1482 (1994).
Schachat AP: Management of uveal melanoma: A continuing dilemma. Cancer 74:3073-3074 (1994).
Schadendorf D, Worm M, Jurgovsky K, Dippel E, Michel S, Charpentier B, Bernardon JM, Reichert U, Czarnetzki BM: Retinoic acid receptor-gamma-selective retinoids exert antiproliferative effects on human melanoma cell growth in vitro. Int J Oncol 5:1325-1331 (1994).
Schartl A, Malitschek B, Kazianis S, Borowsky R, Schartl M: Spontaneous melanoma formation in nonhybrid Xiphophorus. Cancer Res 55:159-165 (1995).
Scholler J, Straten PT, Birck A, Siim E, Dahlstrom K, Drzewiecki KT, Zeuthen J: Analysis of T cell receptor-αβ variability in lymphocytes infiltrating melanoma primary tumours and metastatic lesions. Cancer Immunol Immunother 39:239-248 (1994).
Schultzthater E, Juretic A, Dellabona P, Lusher U, Siegrist W, Harder F, Heberer M, Zuber M, Spagnoli GC: MAGE-1 gene product is a cytoplasmic protein. Int J Cancer 59:435-439 (1994).
Sers C, Riethmuller G, Johnson JP: MUC18, a melanoma-progression associated molecule, and its potential role in tumor vascularization and hematogenous spread. Cancer Res 54:5689-5694 (1994).
Shamailubovitz O, Rothem A, Bendavid E, Sandbank M, Hauben D: Cutaneous metastatic carcinoma of the breast mimicking malignant melanoma, clinically and histologically. J Am Acad Dermatol 31:1058-1060 (1994).
Shaw HM, Mccarthy WH, Thomson JF: Survival superiority of females with melanoma. Arch Surg 129:1343(1994).
Shields JA, Char DH, Gragoudas ES: Management of uveal melanoma: A continuing dilemma - Reply. Cancer 74:3074-3075 (1994).
Silletti S, Timar J, Honn KV, Raz A: Autocrine motility factor induces differential 12- lipoxygenase expression and activity in high- and low- metastatic K1735 melanoma cell variants. Cancer Res 54:5752-5756 (1994).
Slominski AT, Paus R: Inhibition of melanogenesis for melanoma therapy? J Invest Dermatol 103:742(1994).
Sober AJ: Malignant melanoma in a child. J Am Acad Dermatol 31:1078(1994).
Soubrane C, Mouawad R, Ichen M, Benhammouda A, Rixe O, Weil M, Khayat D: IL2 receptor expression in metastatic malignant melanoma patients treated by biochemotherapy. Bull Cancer 81:970-971 (1994).
Stidham KR, Johnson JL, Seigler HF: Survival superiority of females with melanoma - Reply. Arch Surg 129:1343-1344 (1994).
Stolz W, Riemann A, Cognetta AB, Pillet L, Abmayr W, Holzel D, Bilek P, Nachbar F, Landthaler M, Braunfalco O: ABCD rule of dermatoscopy: A new practical method for early recognition of malignant melanoma. European J Dermatology 4:521-527 (1994).
Sutherland CM, Chmiel JS, Henson DE, Winchester DP: Patient characteristics, methods of diagnosis, and treatment of mucous membrane melanoma in the United States of America. J Amer Coll Surgeons 179:561-566 (1994).
Tokimitsu I, Takehana M, Hori H, Nagai Y, Tajima S: Identification of nondisulfided pro alpha(1)(IV) chain produced by cultured B16 melanoma cells. J Biochem Tokyo 116:1039-1043 (1994).
Turner MLC, Moshell AN, Corbett DW, Stern JB, Roth MJ, DiGiovanna J, Horn TD, Kraemer KH: Clearing of melanoma *in situ* with intralesional interferon-α in a patient with Xeroderma pigmentosum. Arch Dermatol 130:1491-1494 (1994).
Valcarcel F, Valverde S, Cardenes H, Cajigal C, Delatorre A, Magallon R, Regueiro C, Encinas JL, Aragon G: Episcleral iridium-192 wire therapy for choroidal melanomas. Int J Radiat Oncol Biol Phys 30:1091-1097 (1994).
Vanderbruggen P, Bastin J, Gajewski T, Coulie PG, Boel P, Desmet C, Traversari C, Townsend A, Boon T: A peptide encoded by human gene MAGE-3 and presented by HLA-A2 induces cytolytic T lymphocytes that recognize tumor cells expressing MAGE-3. Eur J Immunol 24:3038-3043 (1994).
Vanderveen H, Hoekstra OS, Paul MA, Cuesta MA, Meijer S: Gamma probe-guided sentinel node biopsy to select patients with melanoma for lymphadenectomy. Br J Surg 81:1769-1770 (1994).
Vanelsas A, Vandeursen E, Wielders R, Vandenbergbakker CAM, Schrier PI: Ras oncogene activation does not induce sensitivity to natural killer cell - Mediated lysis in human melanoma. J Invest Dermatol 103:S117-S121 (1994).
Vile RG, Nelson JA, Castleden S, Chong H, Hart IR: Systemic gene therapy of murine melanoma using tissue specific expression of the $HSV^{tk}$ gene involves an immune component. Cancer Res 54:6228-6234 (1994).
Wang XN, Heller R, Vanvoorhis N, Cruse CW, Glass F, Fenske N, Berman C, Leomessina J, Rappaport D, Wells K, Deconti R, Moscinski L, Stankard C, Puleo C, Reintgen D: Detection of submicroscopic lymph node metastases with polymerase chain reaction in patients with malignant melanoma. Ann Surg 220:768-774 (1994).
Weinstock MA: Malignant melanoma of the vulva and vagina in the United States: Patterns of incidence and population-based estimates of survival. Am J Obstet Gynecol 171:1225-1230 (1994).
Westerdahl J, Olsson H, Ingvar C: At what age do sunburn episodes play a crucial role for the development of malignant melanoma. Eur J Cancer 30A:1647-1654 (1994).
Westerdahl J, Olsson H, Masback A, Ingvar C, Jonsson N, Brandt L, Jonsson PE, Moller T: Use of sunbeds or sunlamps and malignant melanoma in Southern Sweden. Am J Epidemiol 140:691-699 (1994).
White RL, Schwartzentruber DJ, Guleria A, Macfarlane MP, White DE, Tucker E, Rosenberg SA: Cardiopulmonary toxicity of treatment with high dose interleukin-2 in 199 consecutive patients with metastatic melanoma or renal cell carcinoma. Cancer 74:3212-3222 (1994).
Xerri L, Grob JJ, Battyani Z, Gouvernet J, Hassoun J, Bonerandi JJ: NM23 expression in metastasis of malignant melanoma is a predictive prognostic parameter correlated with survival. Br J Cancer 70:1224-1228 (1994).

Yang TH, Aosai F, Norose K, Ueda M, Yano A: Enhanced cytotoxicity of IFN-gamma-producing CD4(+) cytotoxic T lymphocytes specific for T-gondii-infected human melanoma cells. J Immunol 154:290-298 (1995).
Zabrenetzky V, Harris CC, Steeg PS, Roberts DD: Expression of the extracellular matrix molecule thrombospondin inversely correlates with malignant progression in melanoma, lung and breast carcinoma cell lines. Int J Cancer 59:191-195 (1994).

## MSH, POMC, GROWTH FACTORS & RECEPTORS

Adan RAH, Oosterom J, Ludvigsdottir G, Brakkee JH, Burbach JPH, Gispen WH: Identification of antagonists for melanocortin MC(3), MC(4) and MC(5) receptors. Eur J Pharmacol-Molec Pharm 269:331-337 (1994).
Bahjaouibouhaddi M, Fellmann D, Griffond B, Bugnon C: Insulin treatment stimulates the rat melanin-concentrating hormone-producing neurons. Neuropeptides 27:251-258 (1994).
Baker B, Levy A, Hall L, Lightman S: Cloning and expression of melanin-concentrating hormone genes in the rainbow trout brain. Neuroendocrinology 61:67-76 (1995).
Baubet V, Fevremontange M, Gay N, Debilly G, Bobillier P, Cespuglio R: Effects of an acute immobilization stress upon proopiomelanocortin (POMC) mRNA levels in the mediobasal hypothalamus: A quantitative in situ hybridization study. Mol Brain Res 26:163-168 (1994).
Blasquez C, Jegou S, Feuilloley M, Rosier A, Vandesande F, Vaudry H: Visualization of gamma-aminobutyric acid(A) receptors on proopiomelanocortin-producing neurons in the rat hypothalamus. Endocrinology 135:2759-2764 (1994).
Blesch A, Bosserhoff AK, Apfel R, Behl C, Hessdoerfer B, Schmitt A, Jachimczak P, Lottspeich F, Buettner R, Bogdahn U: Cloning of a novel malignant melanoma-derived growth- regulatory protein, MIA. Cancer Res 54:5695-5701 (1994).
Chowdhary BP, Gustavsson I, Wikberg JES, Chhajlani V: Localization of the human melanocortin-5 receptor gene (MC5R) to chromosome band 18p11.2 by fluorescence *in situ* hybridization. Cytogenet Cell Genet 68:79-81 (1995).
Daniello B, Imperatore C, Fiorentino M, Vallarino M, Rastogi RK: Immunocytochemical localization of POMC-derived peptides (adrenocorticotropic hormone, α-melanocyte-stimulating hormone and β-endorphin) in the pituitary, brain and olfactory epithelium of the frog, *Rana esculenta*, during development. Cell Tissue Res 278:509-516 (1994).
Fildadelfi AMC, Castrucci AML: Melatonin desensitizing effects on the in vitro responses to MCH, α-MSH, isoproterenol and melatonin in pigment cells of a fish (S. marmoratus), a toad (B. ictericus), a frog (R. pipiens) and a lizard (A. carolinensis), exposed to varying photoperiodic regimens. Comp. Biochem. Physiol. 109A:1027-1037, 1994.
Haskellluevano C, Miwa H, Dickinson C, Hruby VJ, Yamada T, Gantz I: Binding and cAMP studies of melanotropin peptides with the cloned human peripheral melanocortin receptor, hMC1R. Biochem Biophys Res Commun 204:1137-1142 (1994).
Hol EM, Verhage M, Gispen WH, Bar PR: The role of calcium and cAMP in the mechanism of action of two melanocortins: αMSH and the ACTH(4-9) analogue Org 2766. Brain Res 662:109-116 (1994).
Johnson PD, Dawson BV, Dorr RT, Hadley ME, Levine N, Hruby VJ: Coat color darkening in a dog in response to a potent melanotropic peptide. Amer J Vet Res 55:1593-1596 (1994).
Lahoste GJ, Marshall JF: Rapid development of D-1 and D-2 dopamine receptor supersensitivity as indicated by striatal and pallidal Fos expression. Neurosci Lett 179:153-156 (1994).
Lamers AE, Flik G, Bonga SEW: A specific role for TRH in release of diacetyl α-MSH in tilapia stressed by acid water. Amer J Physiol-Regul Integr C 36:R1302-R1308 (1994).
Loh YP, Kon OL, Pu LP: Increase in desacetyl-α-MSH cells in rat anterior pituitary following adrenal enucleation and adrenalectomy. Endocr J-Uk 2:115-121 (1994).
Mountjoy KG, Mortrud MT, Low MJ, Simerly RB, Cone RD: Localization of the melanocortin-4 receptor (MC4-R) in neuroendocrine and autonomic control circuits in the brain. Mol Endocrinol 8:1298-1308 (1994).
Murray AM, Ryoo HL, Gurevich E, Joyce JN: Localization of dopamine D-3 receptors to mesolimbic and D- 2 receptors to mesostriatal regions of human forebrain. Proc Natl Acad Sci USA 91:11271-11275 (1994).
Nagy GM, Vecsernyes M, Julesz J, Barna I, Koenig JI: Dehydration decreases plasma level of α-melanocyte stimulating hormone (α-MSH) and attenuates suckling- induced beta-endorphin but not ACTH response in lactating rats. Neuroendocrinol Lett 16:275-284 (1994).
Nanney LB, Coffey RJ, Ellis DL: Expression and distribution of transforming growth factor-α within melanocytic lesions. J Invest Dermatol 103:707-714 (1994).
Sahm UG, Olivier GWJ, Branch SK, Moss SH, Pouton CW: Synthesis and biological evaluation of α-MSH analogues substituted with alanine. Peptides 15:1297-1302 (1994).
Sharma SD, Granberry ME, Jiang JW, Leong SPL, Hadley ME, Hruby VJ: Multivalent melanotropic peptide and fluorescent macromolecular conjugates: New reagents for characterization of melanotropin receptors. Bioconjugate Chemistry 5:591-601 (1994).
Wayman CP, Pike NV, Wilson JF: N-methyl-D-aspartate (NMDA) stimulates release of α-MSH from the rat hypothalamus through release of nitric oxide. Brain Res 666:201-206 (1994).

## TYROSINASE, TYROSINASE RELATED PROTEINS & MOLECULAR BIOLOGY

Bentley NJ, Eisen T, Goding CR: Melanocyte-specific expression of the human tyrosinase promoter: Activation by the *microphthalmia* gene product and role of the initiator. Mol Cell Biol 14:7996-8006 (1994).

Birman S, Morgan B, Anzivino M, Hirsh J: A novel and major isoform of tyrosine hydroxylase in Drosophila is generated by alternative RNA processing. J Biol Chem 269:26559-26567 (1994).
Brown RS, Male KB, Luong JHT: A substrate recycling assay for phenolic compounds using tyrosinase and NADH. Anal Biochem 222:131-139 (1994).
Cabanes J, Chazarra S, Garcia-Carmona F: Kojic acid, a cosmetic skin whitening agent, is a slow- binding inhibitor of catecholase activity of tyrosinase. J Pharm Pharmacol 46:982-985 (1994).
Choi SW, Sapers GM: Effects of washing on polyphenols and polyphenol oxidase in commercial mushrooms (*Agaricus bisporus*). J Agr Food Chem 42:2286-2290 (1994).
Dry IB, Robinson SP: Molecular cloning and characterisation of grape berry polyphenol oxidase. Plant Mol Biol 26:495-502 (1994).
Facchini PJ, Deluca V: Differential and tissue-specific expression of a gene family for tyrosine/dopa decarboxylase in opium poppy. J Biol Chem 269:26684-26690 (1994).
Fukai K, Holmes SA, Lucchese NJ, Siu VM, Weleber RG, Schnur RE, Spritz RA: Autosomal recessive ocular albinism associated with a functionally significant tyrosinase gene polymorphism. Nat Genet 9:92-95 (1995).
Ganss R, Schmidt A, Schutz G, Beermann F: Analysis of the mouse tyrosinase promoter *in vitro* and *in vivo*. Pigm Cell Res 7:275-278 (1994).
Ganss R, Schutz G, Beermann F: The mouse tyrosinase gene - Promoter modulation by positive and negative regulatory elements. J Biol Chem 269:29808-29816 (1994).
Hosoda K, Hammer RE, Richardson JA, Baynash AG, Cheung JC, Giaid A, Yanagisawa M: Targeted and natural (piebald-lethal) mutations of endothelin-B receptor gene produce megacolon associated with spotted coat color in mice. Cell 79:1267-1276 (1994).
Jackson IJ: Molecular and developmental genetics of mouse coat color. Annu Rev Genet 28:189-217 (1994).
Jackson IJ: Workshop Report - Evolution and expression of tyrosinase-related proteins. Pigm Cell Res 7:241-242 (1994).
Jimenez-Cervantes C, Solano F, Lozano JA, Garcia-Borron JC: The DHICA oxidase activity of the melanosomal tyrosinases LEMT and HEMT. Pigm Cell Res 7:298-304 (1994).
Jimenez-Cervantes C, Solano F, Lozano JA, Garcia-Borron JC: Tyrosinase isoenzymes: Two melanosomal tyrosinases with different kinetic properties and susceptibility to inhibition by calcium. Pigm Cell Res 7:291-297 (1994).
Kobayashi T, Urabe K, Orlow SJ, Higashi K, Imokawa G, Kwon BS, Potterf B, Hearing VJ: The Pmel 17/silver locus protein - Characterization and investigation of its melanogenic function. J Biol Chem 269:29198-29205 (1994).
Kobayashi T, Urabe K, Winder A, Tsukamoto K, Brewington T, Imokawa G, Potterf B, Hearing VJ: DHICA oxidase activity of TRP1 and interactions with other melanogenic enzymes. Pigm Cell Res 7:227-234 (1994).
Kwon HY, Bultman SJ, Loffler C, Chen WJ, Furdon PJ, Powell JG, Usala AL, Wilkison W, Hansmann I, Woychik RP: Molecular structure and chromosomal mapping of the human homolog of the agouti gene. Proc Natl Acad Sci USA 91:9760-9764 (1994).
Lee ST, Nicholls RD, Schnur RE, Guida LC, Lukuo J, Spinner NB, Zackai EH, Spritz RA: Diverse mutations of the P gene among African-Americans with type II (tyrosinase-positive) oculocutaneous albinism (OCA2). Hum Mol Genet 3:2047-2051 (1994).
Morita H, Kayashita T, Takeya K, Itokawa H: Cyclic peptides from higher plants .10. Conformational analysis of a tyrosinase inhibitory cyclic pentapeptide, pseudostellarin A, from *Pseudodellaria heterophylla*. Tetrahedron 50:12599-12608 (1994).
Naish-Byfield S, Cooksey CJ, Riley PA: Oxidation of monohydric phenol substrates by tyrosinase: Effect of dithiothreitol on kinetics. Biochem J 304:155-162 (1994).
Oetting WS, King RA: Analysis of tyrosinase mutations associated with tyrosinase-related oculocutaneous albinism (OCA1). Pigm Cell Res 7:285-290 (1994).
Oetting WS, King RA: Molecular basis of oculocutaneous albinism. J Invest Dermatol 103:S131-S136 (1994).
Perry WL, Copeland NG, Jenkins NA: The molecular basis for dominant yellow agouti coat color mutations. Bioessays 16:705-707 (1994).
Rosemblat S, Durham-Pierre D, Gardner JM, Nakatsu Y, Brilliant MH, Orlow SJ: Identification of a melanosomal membrane protein encoded by the pink-eyed dilution (type II oculocutaneous albinism) gene. Proc Natl Acad Sci USA 91:12071-12075 (1994).
Sato S, Miura H, Yamamoto H, Takeuchi T: Identification of nuclear factors that bind to the mouse tyrosinase gene regulatory region. Pigm Cell Res 7:279-284 (1994).
Siracusa LD: The agouti gene: Turned on to yellow. Trends Genet 10:423-428 (1994).
Solano F, Martinez-Liarte JH, Jimenez-Cervantes C, Garcia-Borron JC, Lozano JA: Dopachrome tautomerase is a zinc-containing enzyme. Biochem Biophys Res Commun 204:1243-1250 (1994).
Song YH, Conner E, Li YX, Zorovich B, Balducci P, Maclaren N: The role of tyrosinase in autoimmune vitiligo. Lancet 344:1049-1052 (1994).
Spritz RA: Molecular basis of human piebaldism. J Invest Dermatol 103:S137-S140 (1994).
Sturm RA, Osullivan BJ, Thomson JAF, Jamshidi N, Pedley J, Parsons PG: Expression studies of pigmentation and POU-domain genes in human melanoma cells. Pigm Cell Res 7:235-240 (1994).
Terato H, Yamamoto O: Hydrated electron-induced inactivation of tyrosinase in aqueous solution by exposure to cobalt-60 gamma-rays .1. Cresolase activity. Biochem Mol Biol Int 34:295-300 (1994).
Vile R, Miller N, Chernajovsky Y, Hart I: A comparison of the properties of different retroviral vectors containing the murine tyrosinase promoter to achieve transcriptionally targeted expression of the HSVtk or IL-2 genes. Gene Therapy 1:307-316 (1994).
Winder AJ, Wittbjer A, Odh G, Rosengren E, Rorsman H: The mouse brown (b) locus protein functions as a dopachrome tautomerase. Pigm Cell Res 7:305-310 (1994).

Yasumoto KI, Yokoyama K, Shibata K, Tomita Y, Shibahara S: Microphthalmia-associated transcription factor as a regulator for melanocyte-specific transcription of the human tyrosinase gene. Mol Cell Biol 14:8058-8070 (1994).
Yokoyama K, Yasumoto K, Suzuki H, Shibahara S: Cloning of the human DOPAchrome tautomerase/tyrosinase-related protein 2 gene and identification of two regulatory regions required for its pigment cell-specific expression. J Biol Chem 269:27080-27087 (1994).
Zhao HQ, Boissy RE: Distinguishing between the catalytic potential and apparent expression of tyrosinase activities. Am J Med Sci 308:322-330 (1994).

## MISCELLANEOUS

Abadi RV, Pascal E: Periodic alternating nystagmus in humans with albinism. Invest Ophthalmol Visual Sci 35:4080-4086 (1994).
Apkarian P: VEP in albinism. Ophthalmology 101:1867-1868 (1994).
Bolognia JL, Sodi SA, Chakraborty AK, Fargnoli MC, Pawelek JM: Effects of ultraviolet irradiation on the cell cycle. Pigm Cell Res 7:320-325 (1994).
Dierickx C, Goldman MP, Fitzpatrick RE: Laser treatment of erythematous/hypertrophic and pigmented scars in 26 patients. Plast Reconstr Surg 95:84-90 (1995).
Hedera P, Lai S, Haacke EM, Lerner AJ, Hopkins AL, Lewin JS, Friedland RP: Abnormal connectivity of the visual pathways in human albinos demonstrated by susceptibility-sensitized MRI. Neurology 44:1921-1926 (1994).
Hirobe T: Effects of gamma-irradiation on the yield of mid-ventral white spots in mice in different genetic backgrounds and at different times during development. Mutat Res-Genetic Toxicology 322:213-220 (1994).
Kelly RI, Cook MG, Mortimer PS: Aggressive amelanotic lentigo maligna. Br J Dermatol 131:562-565 (1994).
Kim RY, Retsas S, Fitzke FW, Arden GB, Bird AC: Cutaneous melanoma-associated retinopathy. Ophthalmology 101:1837-1843 (1994).
Klein C, Philippe N, Ledeist F, Fraitag S, Prost C, Durandy A, Fischer A, Griscelli C: Partial albinism with immunodeficiency (Griscelli syndrome). J Pediatr 125:886-895 (1994).
Kondoh M, Ueda M, Nakagawa K, Ichihashi M: Siblings with xeroderma pigmentosum complementation group A with different skin cancer development: Importance of sun protection at an early age. J Am Acad Dermatol 31:993-996 (1994).
Kraemer KH, Levy DD, Parris CN, Gozukara EM, Moriwaki S, Adelberg S, Seidman MM: Xeroderma pigmentosum and related disorders: Examining the linkage between defective DNA repair and cancer. J Invest Dermatol 103:S96-S101 (1994).
Macdonald IM, Sasi R: Molecular genetics of inherited eye disorders. Clin Invest Med 17:474-498 (1994).
Menter JM, Hollins TD, Sayre RM, Etemadi AA, Willis I, Hughes SNG: Protection against UV photocarcinogenesis by fabric materials. J Am Acad Dermatol 31:711-716 (1994).
Ogino T, Hata H, Minakuchi E, Iyoda K, Narahara K, Ohtahara S: Neurophysiologic dysfunction in hypomelanosis of Ito: EEG and evoked potential studies. Brain Dev 16:407-412 (1994).
Poirier V, Boisseau S, Poujeol C, Simonneau M: Environmental signals and neural crest cells. J Physiology-Paris 88:265-269 (1994).
Ponten J: Hypotheses for the genesis of UV-induced non-melanotic human skin cancer. Folia Biol Prague 40:263-279 (1994).
Rosenfeld PJ, Mckusick VA, Amberger JS, Dryja TP: Recent advances in the gene map of inherited eye disorders: Primary hereditary diseases of the retina, choroid, and vitreous. J Med Genet 31:903-915 (1994).
Sato M, Nishigori C, Lu YJ, Zghal M, Yagi T, Takebe H: Far less frequent mutations in ras genes than in the p53 gene in skin tumors of xeroderma pigmentosum patients. Mol Carcinogen 11:98-105 (1994).
Sichel G, Corsaro C, Cassiani E, Magnani C, Bolognani L: ATPase activity of melanosomes in liver pigment cells of *Rana esculenta* L. Comp Biochem Physiol [B] 108:521-528 (1994).
Sybert VP: Hypomelanosis of Ito: A description, not a diagnosis. J Invest Dermatol 103:S141-S143 (1994).
Takiwaki H, Shirai S, Kohno H, Soh H, Arase S: The degrees of UVB-induced erythema and pigmentation correlate linearly and are reduced in a parallel manner by topical anti-inflammatory agents. J Invest Dermatol 103:642-646 (1994).
Tanaka S, Pener MP: A neuropeptide controlling the dark pigmentation in color polymorphism of the migratory locust, *Locusta migratoria*. J Insect Physiol 40:997-1005 (1994).

## Current PASPCR Members

**Zalfa A. Abdel-Malek Ph.D.**
University of Cincinnati
Department of Dermatology
231 Bethesda Avenue, Mail #592
Cincinnati, OH 45267
Phone: 513/558-6242
FAX: 513/558-1098

**Ago B. Ahene Ph.D.**
Syntex Discovery Research
3401 Hillview Avenue, A3-298
Palo Alto, CA 94303
Phone: 415/855-5290
FAX: 415/354-7335
E-Mail: ago,ahene@synmail.syntex.com

**Lisa M. Austin M.S.**
University of Cincinnati
Department of Dermatology
231 Bethesda Ave.
Cincinnati, OH 45267-0592
Phone: 513/558-6242
FAX: 513/558-0198
EMail: austinlm@ucbeh.san.uc.edu

**Joseph T. Bagnara Ph.D.**
University of Arizona - Anatomy
College of Medicine
Tucson, AZ 85724
Phone: 602/621-7516
FAX: 602/621-9339

**Diane Barker B.A.**
University of Cincinnati
Department of Dermatology
231 Bethesda Ave.
Cincinnati, OH 45267-0592
Phone: 513/558-6251
FAX: 513/558-0198

**Gregory Barsh M.D., Ph.D.**
Howard Hughes Medical Institute
Stanford University School of Medicine
Beckman Center, B271
Stanford, CA 94305
Phone: 415/723-5061
FAX: 415/723-1399

**Jag Bhawan M.D.**
Boston Univ School of Medicine
Department of Dermatology
609 Albany Street, Room 309
Boston, MA 02118
Phone: 617/638-5570
FAX: 617/638-5515

**Karen E Bijwaard Ph.D.**
Georgetown University
Department of Pathology
3900 Reservoir Road, NW
Washington, DC 20007
Phone: 202/687-1126
FAX: 202/687-8935

**Markus Boehm M.D.**
Yale University School of Medicine
Department of Dermatology
500 LCI. P.O. Box 208059
New Haven, CT 06520
Phone: 203/785-4970
FAX: 203/785-7636

**Raymond E. Boissy Ph.D.**
University of Cincinnati
Department of Dermatology
23l Bethesda Avenue, Mail #592
Cincinnati, OH 45267
Phone: 513/558-6242
FAX: 513/558-0198
E-Mail: raymond.boissy@uc.edu

**Jean L. Bolognia M.D.**
Yale Medical School
Department of Dermatology
333 Cedar Street
New Haven, CT 06510
Phone: 203/785-4092
FAX: 203/785-7637

**Frédéric Bonté Ph.D.**
LVMH Recherche
25 rue des peupliers
92703 Nanterre cedex, France
Phone: 33-1/41-197-621
FAX: 33-1/47-691-672

**Roger R. Bowers Ph.D.**
California State Univ. Los Angeles
Department of Biology
5151 State University Drive
Los Angeles, CA 90032
Phone: 213/343-2081
FAX: 213/343-6451

**Murray H. Brilliant Ph.D.**
Fox Chase Cancer Center
Institute for Cancer Research
7701 Burholme Avenue
Philadelphia, PA 19111
Phone: 215/728-2864
FAX: 215/728-3616
E-Mail: brilliant@mhb.pink.fccc. edu

**Jean B. Burnett Ph.D.**
P.O. Box 805
Okemos, MI 48805-0805

**Jean-Claude Bystryn M.D.**
New York Univ Medical Center
Department of Dermatology
550 First Avenue
New York, NY 10016
Phone: 212/263-5243
FAX: 212/263-8561

**Ana M. Castrucci Ph.D.**
Institute of Biosciences
University of Sao Paulo CP 11176
Sao Paulo, SP 05422-900, Brazil
Phone: 55-11/818-7523
FAX: 55-11/818-7422
E-Mail: amdlcast@cce.usp.br

**Catherine Causse**
L'Oreal
Lab de Recherche Fondementale
1, Avenue Eugene Schueller
93601 Aulnay-Sous-Bois Cedex, France
Phone: 33-47/567-735

**Miles R. Chedekel Ph.D.**
MeL-CO
4255 County Road MM
Orland, CA 95963
Phone: 916/865-9033
FAX: 916/865-4092

**Alistair J. Cochran M.D.**
UCLA Medical Center
Departmentt of Pathology
13-344 CHS
Los Angeles, CA 90024-1732
Phone: 213/825-2743
FAX: 213/206-5178
E-mail:acochran@pathology.medsch.ucla.edu

**Roger D. Cone Ph.D.**
Oregon Health Sciences University
Vollum Institute
3181 S.W. Sam Jackson Park Road
Portland, OR 97201
Phone: 503/494-4668
FAX: 503/494-4534

**Tricia Cooley B.S.**
University of Kansas
Dept of Physiology & Cell Biology
Haworth Hall
Lawrence, KS 66045
Phone: 913/864-4279
E-mail: cooley@falcon.cc.ukans.edu

**Mark E. Costlow Ph.D.**
Schering-Plough Corporation
Advanced Products Research
3030 Jackson Avenue
Memphis, TN 38151
Phone: 901/320-5028
FAX: 901/320-5526

**Mary K. Cullen M.D.**
Washington University School of Medicine
Departments of Cell Biology & Dermatology
660 South Euclid, Box 8228
St. Louis, MO 63130
Phone: 314/362-1082
FAX: 314/362-7463
E-mail: mkcullen@cellbio.wustl.edu

**John O. DeJordy M.D.**
Royal Victoria Hospital
Department of Dermatology
687 Avenue des Pins Quest
Montreal, H3A 1A1, Canada
Phone: 514/842-1231 ext. 4650
FAX: 514/982-0686
E-Mail: dejordy@rclvax.medcor.mc gill.ca

**Phillipe Donatien Ph.D.**
New York University Medical Center
Department of Dermatology
550 First Avenue
New York, NY 10016
Phone: 212/263-5070
FAX: 212/263-8752

**Donna-Gay Durham-Pierre Ph.D.**
Fox Chase Cancer Center
Fox Chase Cancer Research
7701 Burholme Avenue
Philadelphia, PA 19111
Phone: 215/728-2865
FAX: 215/728-3616

**Magdalena Eisinger D.V.M.**
American Cyanamid Co.
Department of Cell Biology
Building 205, Room 3113
Pearl River, NY 10965
Phone: 914/732-4495
FAX: 914/732-5536

**David E. Elder M.D.**
University of Pennsylvania
Department of Anatomic Pathology
3400 Spruce Street
Philadelphia, PA 19104
Phone: 215/662-6503

FAX: 215/349-5910
E-mail: david-elder@pathla.upenn.edu

**Maria Fargnoli M.D.**
Yale University School of Medicine
Department of Dermatology
33 Cedar Street
New Haven, CT 06525
Phone: 203/785-3078
FAX: 203/785-7637

**Philip J. Fernandez Ph.D.**
Department of Natural Sciences
Grand Canyon University
3300 W. Cambelback Road
Phoenix, AZ 85017
Phone: 602/589-2575
FAX: 602/589-2895

**Thomas G. Froiland Ph.D.**
Northern Michigan University
Deparment of Biology
277 W. Science
Marquette, MI 49855
Phone: 906/227-2310
FAX: 906/227-2013

**Sally K. Frost-Mason Ph.D.**
3038 Hayworth Hall
University of Kansas
Dept. of Physiology & Cell Biology
Lawrence, KS 66045-2106
Phone: 913/864-3296
FAX: 913/864-5321
E-Mail: sfm@clasmain.clas.ukans .edu

**Bryan B. Fuller Ph.D.**
Univ. of Oklahoma Health Sciences Center
Dept. of Biochemistry & Molecular Biology
P.O. Box 26901
Oklahoma City, OK 26901
Phone: 405/271-2160
FAX: 405/271-3139
Email: bryan-fuller@uokhsc.edu

**John M. Gardner Ph.D.**
Fox Chase Cancer Center
Institute for Cancer Research
7701 Burholme Avenue
Philadelphia, PA 19111
Phone: 215/728-2865
FAX: 215/728-3616

**David Granholm B.A.**
South Dakota State University
Dept. of Biology & Microbiology
Box 2140D, NPB 252
Brookings, SD 57007
Phone: 605/688-4554
FAX: 605/688-5624

**Nels H. Granholm Ph.D.**
South Dakota State University
Dept. of Biology & Microbiology
Box 2140D
Brookings, SD 57007
Phone: 605/688-4554
FAX: 605/688-6065

**Herbert F. Haberman M.D.**
Toronto Western Hospital
399 Bathurst Street
Toronto, ONT M5T 2S8, Canada
Phone: 416/369-5952
FAX: 416/489-2960

**Mac E. Hadley Ph.D.**
University of Arizona - Anatomy
College of Medicine
Tucson, AZ 85724
Phone: 602/621-3414
FAX: 602/621-9339

**Ruth Halaban Ph.D.**
Yale Medical School
Department of Dermatology
New Haven, CT 06520-8059
Phone: 203/785-4352
FAX: 203/785-7234
Email: halaban@biomed.med.yale. edu

**Rebat M. Halder M.D.**
Howard University
Department of Dermatology
2041 Georgia Avenue, NW
Washington, DC 20060
Phone: 202/865-6725
FAX: 202/865-1757

**Seung-Kyung Hann M.D.**
Yomsei University College of Medicine
Department of Dermatology
CPO Box 8044
Seoul, Korea
Phone: 82-2/361-5720
FAX: 82-2/393-9157

**Elizabeth D. Hearing M.S.**
Data Abstract Search Service
2247 Regina Drive
Clarksburg, MD 20871
Phone: 301/831-6279
FAX: 301/865-1180

**Vincent J. Hearing Ph.D.**
NCI - NIH - Cell Biology
Building 37, Room 1B22
Bethesda, MD 20892
Phone: 301/496-1564
FAX: 301/402-8787
E-mail: hearingv@dc37a.nci.nih.gov

**Meenhard Herlyn DVM**
The Wistar Institute
Program of Cellular and Molecular Biology
3601 Spruce Street
Philadelphia, PA 19104
Phone: 215/898-3950
FAX: 215/898-0980
E-mail: herlynm@wista.wistar.upenn.edu

**George Hill M.D., Ph.D.**
UMDNJ - New Jersey Medical School
185 South Orange Avenue
Room G595
Newark, NJ 07103
Phone: 201/456-6295
FAX: 201/456-4559

**Helene Z. Hill Ph.D.**
New Jersey Medical School
Dept of Radiology - MSB E586
185 South Orange Avenue
Newark, NJ 07103-2714
Phone: 201/982-3421
FAX: 201/982-4559
E-Mail: hill@umdnj.edu

**Robert M. Hoffman Ph.D.**
AntiCancer, Inc.
7919 Ostrow Street
San Diego, CA 92111
Phone: 619/654-2555
FAX: 619/268-4175

**Thomas J. Holstein Ph.D.**
Roger Williams University
Department of Biology
Old Ferry Road
Bristol, RI 02809
Phone: 401/254-3097
FAX: 401/254-3480
E-mail: tholstein@acc.rwu.edu

**Alan N. Houghton M.D.**
Memorial Sloan-Kettering Cancer Center
Dept of Medicine & Immunology
1275 York Avenue
New York, NY 10021
Phone: 212/639-7595
FAX: 212/717-3036

**Sungbin Im M.D.**
University of Cincinnati
Department of Dermatology
231 Bethesda Ave.
Cincinnati, OH 45267-0592
Phone: 513/558-6242
FAX: 513/558-0198

**Shosuke Ito Ph.D.**
Fujita Health University
School of Health Sciences
Toyoake, Aichi 470-11 Japan
Phone: 81-562/93-2595
FAX: 81-562/93-4595

**Gert M. Jacobsohn Ph.D.**
Hahnemann University
Department of Biological Chemistry
Broad & Vine Streets
Philadelphia, PA 19102-1192
Phone: 215/762-7760
FAX: 215/246-5836
E-Mail: jacobsohng@hal.hahnemann .edu

**Kowichi K. Jimbow, M.D., Ph.D.**
University of Alberta
260G Heritage Medical Research Center
Edmonton, AB T6G 2S2, Canada
Phone: 403/492-2425
FAX: 403/492-7715

**Koichiro Kameyama, M.D., Ph.D.**
Jiyugaoka Clinic
3-12-10 Yakumo, Park Villa 2F
Meguro, Tokyo 152, Japan
Phone: 81-3/5701-2500
FAX: 81-3/5701-2633

**Soverin Karmiol Ph.D.**
Clonetics Corporation
Department of Research and Development
9620 Chesapeake Drive, Suite 201
San Diego, CA 92123
Phone: 619/541-0086
FAX: 619/541-0823

**John A. Kenney, Jr., M.D.**
Howard University
1442 Iris Street, NW
Washington, DC 20012
Phone: 202/882-2477 (home)
FAX: 202/865-1757

**Sang Tae Kim M.D.**
Kosin Medical College
Department of Dermatology
34 Amnam-dong
Pusan, 602-702 South Korea
Phone: 82-51/240-6255
FAX: 82-51/255-8672

**Victoria Kimler Ph.D.**
The Chicago Medical School
Dept. of Cell Biology & Anatomy
333 Green Bay Road
North Chicago, IL
Phone: 708/578-3211
FAX: 708/578-3253

**Richard A. King M.D., Ph.D.**
University of Minnesota
Box 485 UMHC
420 Delaware Street, S.E.
Minneapolis, MN 55455
Phone: 612/624-0144
FAX: 612/624-6645
E-Mail: kingx002@maroon.tc.umn.edu

**W. Gerald Klingler M.D.**
543 West Miller, Suite 100
Springfield, IL 62702
Phone: 217/744-2000
FAX: 217/744-2004

**Takeshi Kobayashi M.S.**
Kao Corporation
nstitute for Fundamental Research
606, Akabane, Ichikaimachi
aga, Tochigi, 321-34, Japan
Phone: 81-285/68-7468
FAX: 81-285/68-7469

**Gregory J. Kramer Ph.D.**
Procter and Gamble Company
P.O. Box 538707
Cincinnati, OH 45253
Phone: 513/627-1310
FAX: 513/627-0575

**Byoung S. Kwon Ph.D.**
Indiana University
Departments of Microbiol & Immunology
635 Barnhill Drive-MS 255
Indianapolis, IN 46202-5120
Phone: 317-274-3965
FAX: 317/274-4090
E-Mail: ilvu100@IndyCMS

**M. Lynn Lamoreux Ph.D.**
Texas A & M University
Department of Pathobiology
College Station, TX 77843
Phone: 409/845-6084
FAX: 409/845-9972
E-mail: llamoreux@vetmed.tamu.edu

**Maria T. Lamy-Freund Ph.D.**
Universidade de Sao Paulo
Instituto De Fisica
Caixa Postal 20 516
Sao Paulo, SP CEP 01452-990, Brazil
Phone: 55-11/818-6829
FAX: 55-11/818-6701
Email: mtfreund@if.usp.ansp.br

**Isabelle C. Le Poole C. Ph.D.**
AMC/Amsterdam University
Department of Dermatology & Pathology
Meibergdreef g
1105 AZ Amsterdam, The Netherlands
Phone: 31-20/566-5727
FAX: 31-20/696-0389

**Aaron B. Lerner M.D., Ph.D.**
Yale Medical School
Department of Dermatology
333 Cedar Street, PO Box 3333
New Haven, CT 06510-8059
Phone: 203/785-5114
FAX: 203/785-7234
E-mail: aaron_lerner@qm.yale.edu

**Norman Levine M.D.**
University of Arizona
Department of Dermatology
1501 N. Campbell Avenue
Tucson, AZ 85724
Phone: 602/626-7783
FAX: 602/626-4299

**Kenneth A. Mason Ph.D.**
University of Kansas
Department of Biochemistry
Lawrence, KS 66045
Phone: 913/864-4279
FAX: 913/864-5321

**Katsuo Matsumoto B.S.**
POLA Laboratories
560 Kashio-Cho, Tozuka-Ku
Yokohama, 244, Japan
Phone: 45/826-7231
FAX: 45/826-7249

**John A. McLane Ph.D.**
Hoffman-La Roche Inc.
340 Kingsland Street
Nutley, NJ 07110-1199
Phone: 201/235-3537
FAX: 201/235-7010

**David I. McLean M.D.**
University of British Columbia
Department of Dermatology
855 W. 10th Avenue
Vancouver, BC V5Z 1L7, Canada
Phone: 604/875-4747
FAX: 604/873-9919

**Julian M. Menter Ph.D.**
Morehouse School of Medicine
Dept of Medicine & Dermatology
720 Westview Drive S.W.
Atlanta, GA 30310
Phone: 404/752-1697
FAX: 404/752-8443

**Frank L. Meyskens, Jr., M.D.**
Univ. of California - Cancer Ctr.
101 City Drive
Orange, CA 92668
Phone: 714/456-6310
FAX: 714/456-5039

**Nadine C. Milos Ph.D.**
University of Alberta
Department of Oral Biology
Dentistry - Pharmacy Centre
Edmonton, AB T6G 2M8, Canada
Phone: 403/492-4958
FAX: 403/492-1624

**Beatrice Mintz Ph.D.**
Fox Chase Cancer Center
Institute for Cancer Research
7701 Burholme Avenue
Philadelphia, PA 19111
Phone: 215/728-2479
FAX: 215/728-3574

**Yutaka Mishima M.D., Ph.D.**
Mishima Inst for Dermatological Research
17-8-801, 3-Chome
Motomachi-dori, Chuo-Ku
Kobe 650, Japan
Phone: 81-78/334-1663
FAX: 81-78/334-1660

**Gisela E. Moellmann Ph.D.**
Yale Univrsity School of Medicine
Dermatology LLCI-500
P.O. Box 208059
New Haven, CT 06520-8059
Phone: 203/785-5366
FAX: 203/785-7637
E-mail: jack-schreiber@quickmail.yale.edu

**Kenji Mori**
Kanebo, Ltd.
Department of Cosmetics
693 Fifth Avenue, 17th Floor
New York, NY 10022
Phone: 212/244-1506
FAX: 212/563-4064

**Randall L. Morrison Ph.D.**
Hood College
Department of Biology
401 Rosemont Avenue
Frederick, MD 21701
Phone: 301/696-3659
FAX: 301/694-7653
E-mail: rmorrison@nimue.hood.edu

**Bryan P. Murphy Ph.D.**
Clairol Research & Development labs
Exploratory Development
2 Blachley Road
Stamford, CT 06922
Phone: 203/357-5025
FAX: 203/348-3267

**Anthony J. Nappi Ph.D.**
Loyola University of Chicago
Department of Biology
6525 North Sheridan Road
Chicago, IL 60626
Phone: 312/508-3632
FAX: 312/508-3648
E-mail: anappi@orion.it.luc.edu

**John C. Naughten Ph.D.**
Northern State University
12th and Jay Streets
Aberdeen, SD 57401-7198
Phone: 605/622-2456
FAX: 605/622-3022

**J. Michael Newton B.S.**
University of Arizona
Department of Anatomy
College of Medicine
Tucson, AZ 85724
Phone: 602/621-7516

FAX: 602/621-9339

**Robert Nicholls Ph.D.**
Case Western Reserve University
Department of Genetics
10900 Euclid Avenue
Cleveland, OH 44106
Phone: 216/368-3331
FAX: 216/368-3432

**Richard M. Niles Ph.D.**
Marshall Univ School of Medicine
Dept of Biochemistry & Molecular Biology
1542 Spring Valley Drive
Huntington, WV 25755
Phone: 304/696-7323
FAX: 304/696-7253

**James J. Nordlund M.D.**
University of Cincinnati
Department of Dermatology
231 Bethesda Avenue, Mail #592
Cincinnati, OH 45267-0592
Phone: 513/558-6242
FAX: 513/558-0198
Email: nordlujj@uc.eduexternal

**David A. Norris M.D.**
Department of Dermatology
University of Colorado Medical Center
4200 East 9th Avenue
Denver, CO 80262
Phone: 303/372-1142
FAX: 303/372-1159

**William S. Oetting Ph.D.**
University of Minnesota
Box 485 UMHC
420 Delaware Street S.E.
Minneapolis, MN 55455
Phone: 612/624-1139
FAX: 612/624-6645
E-Mail: bill@lenti.med.umn.edu

**Seth J. Orlow M.D., Ph.D.**
NYU Medical Center
Department of Dermatology
550 First Avenue, RM H-100
New York, NY 10016
Phone: 212/263-5070
FAX: 212/263-8752

**Jean Paul Ortonne M.D.**
Hopital Pasteur
B.P. 69
06002 Nice Cedex 1, France
Phone: 33-92/03-77-12
FAX: 33-92/03-84-43

**David M. Parichy B.A.**
University of California at Davis
Section of Evolution and Ecology
The Center for Population Biology
Davis, CA 95616
Phone: 916/752-3634
FAX: 916/752-1449
Email: dmparichy@ucdavis.edu

**Madhu A. Pathak M.B., Ph.D.**
Harvard Medcal School - Derm.
Mass. General Hospital
Fruit Street, Warren 516
Boston, MA 02114
Phone: 617/726-3996
FAX: 617/726-1875

**William J. Pavan Ph.D.**
National Institutes of Health
Natl Center for Human Genome Research
LGDR, Building 49, Room 4A82
Bethesda, MD 20892
Phone: 301/402-2036
FAX: 301/402-2170

**John M. Pawelek Ph.D.**
Yale Medical School
Department of Dermatology
333 Cedar Street
New Haven, CT 06510
Phone: 203/785-4963
FAX: 203/785-7637

**Sreekumar Pillai M.S.**
University of Massachusetts, Amherst
Department of Veterinary & Animal Sciences
#307 Stockbridge Hall
Amherst, MA 01003
Phone: 413/545-2137

**Seymour H. Pomerantz Ph.D.**
5717 Ridgedale Road
Baltimore, MD 21209
Phone: 410/367-7281

**Susan Porter Ph.D.**
Dept of Pathology & Laboratory Medicine
University of British Columbia
2211 Westbrook Mall
Vancouver, Brit Columbia V6T 2B5 Canada
Phone: 604/833-7096
FAX: 604/822-7635
Eml:
susan_porter@academic.pathology.ubc.can

**Brian Potterf M.S.**
National Institutes of H ealth, NCI
Laboratory of Cell Biology
Building 37, Room 1B22
Bethesda, MD 20892
Phone: 301/402-0003
FAX: 301/402-8787

**Neelu Puri Ph.D.**
Wistar Institute
3601 Spruce Street
Philadelphia, PA 19104-4268
Phone: 215/898-3950
FAX: 215/898-0980

**Walter C. Quevedo, Jr., Ph.D.**
Brown University
Division of Biology & Medicine
Providence, RI 02912
Phone: 401/863-2758
FAX: 401/863-1971

**Arthur R. Rhodes M.D., M.P.H.**
University of Pittsburgh Medical Center
Department of Dermatology
3601 Fifth Avenue
Pittsburgh, PA 15213
Phone: 412/648-3266
FAX: 412/648-8117

**Manuel Rieber Ph.D.**
I.V.I.C. (Tumor Cell Biology)
BAMCO CCS-199-00
P.O. Box 025322
Miami, FL 3102-5322
Phone: 582/501-1494
FAX: 582/501-1382

**Mark D. Rollag Ph.D.**
Uniformed Services University
Department of Anatomy
4301 Jones Bridge Road
Bethesda, MD 20814-4799
Phone: 301/295-3212
FAX: 301/295-1715
E-Mail: rollag@usuhs.usuhs.mil

**Susana Rosemblat M.D.**
New York University Medical Center
Department of Dermatology
562 First Avenue, Room H-313
New York, NY 10016
Phone: 212/263-5070
FAX: 212/263-8752

**Stefan Schmitz M.D.**
Free University of Berlin
Department of Dermatology
Clinical Medical Centre Steglitz
Hindenburgdamm 30
12200 Berlin , Germany
Phone: 49-30/378-2770
FAX: 49-30/789-4141

**Thomas M. Schultz Ph.D.**
Zotos Corporation
100 Tokeneke Road
Darien, CT 06820
Phone: 203/656-7790
FAX: 203/656-7794

**Ian R. Scott Ph.D.**
Unilever Research U.S.
45 River Road
Edgewater, NJ 07020
Phone: 201/963-7100 ext. 2919
FAX: 201/963-5332

**Wade C. Sherbrooke Ph.D.**
American Museum of Natural History
Southwestern Research Station
Portal, AZ 85632
Phone: 602/558-2396
FAX: 602/558-2396

**Willys K. Silvers Ph.D.**
University of Pennsylvania
School of Medicine
Department of Genetics
Philadelphia, PA 19104-6145
Phone: 215/898-5174
FAX: 215/573-5892

**Andrzej T. Slominski M.D., Ph.D.**
Albany Medical College
Dept. of Pathology & Laboratory Medicine
47 New Scotland Avenue
Albany, NY 12208
Phone: 518/262-5454
FAX: 518/262-3663

**J. Robert Smyth, Jr., Ph.D.**
University of Massachusetts
Dept. of Veterinary &Animal Science
307A Stockbridge Hall
Amherst, MA 01003
Phone: 413/545-2137
FAX: 413/545-6326
E-Mail: wgraves@coopest.umass.edu

**Arthur J. Sober M.D.**
Massachusetts General Hospital
Department of Dermatology
Boston, MA 02114
Phone: 617/726-7989
FAX: 617/724-2745

**Dennis Stephenson Ph.D.**
University College London
Department of Genetics and Biometry
4 Stephenson Way
London NW1 2HE United Kingdom
Phone: 44-71/380-7423
FAX: 44-71/387-3496

**Manickam Sugumaran Ph.D.**
University of Massachusetts at Boston
Department of Biology
100 Marrissey Boulevard
Boston, MA 02125
Phone: 617/287-6600
FAX: 617/287-6650

**Itaru Suzuki M.S.**
University of Cincinnati
Department of Dermatology
231 Bethesda Avenue
Cincinnati, OH 45267-0592
Phone: 513/558-6242
FAX: 513/558-0198

**Richard T. Swank Ph.D.**
Roswell Park Cancer Institute
Department of Molecular & Cell Biology
Elm and Carlton Streets
Buffalo, NY 14263
Phone: 716/845-3429
FAX: 716/845-8169
E-mail: rswank@mcbio.med.buffalo.edu

**Harold M. Swartz M.D., Ph.D.**
Dartmouth Medical School
HB 7252 Strasenburgh Hall
Hanover, NH 03756
Phone: 603/650-1955
FAX: 603/650-1935
E-Mail: harold.swartz@dartmouth. edu

**Masayoshi Tachibana M.D., Ph.D.**
National Institute of Deafness
& Other Communication Disorders
Laboratory of Molecular Genetics
Section of Gene Expression and Function
Bethesda, MD 20892
Phone: 301/496-2583
FAX: 301/480-3242

**John D. Taylor Ph.D.**
Wayne State University
Dept. of Biological Sciences & Rad Oncology
Detroit, MI 48202
Phone: 313/577-2877
FAX: 313/577-0798

**Masayuki Tejima M.Sc.**
Shiseido America Technocenter
100 Tokeneke Road
Darien, CT 06820
Phone: 203/656-7999
FAX: 203/656-7995

**Giselle Thibaudeau Ph.D.**
Mississippi State University
Department of Biological Sciences
Harned Hall
Mississippi State, MS 39762
Phone: 601/325-7572
FAX: 601/325-7939
E-Mail: Giselle@ra.msstate.edu

**Kenneth J. Tomecki M.D.**
Cleveland Clinic Foundation
Department of Dermatology - A61
9500 Euclid Avenue
Cleveland, Ohio 44195
Phone: 216/444-2651
FAX: 216/445-6365

**Jeffrey M. Tosk Ph.D.**
Jerry L. Pettis Memorial VA Med Center
Parkinson's Research Center
Research Service 151
Loma Linda, CA 92357
Phone: 909/825-7084 ext 2707
FAX: 909/796-4508

**DeWayne Townsend Ph.D.**
University of Minnesota
Box 485 UMHC
420 Delaware Street S.E
Minneapolis, MN 55455
Phone: 612/625-7467
FAX: 612/624-6645
Email: d-town@maroon.tc.umn.edu

**Ronald Trancik Ph.D.**
Upjohn Company
Department of Clinical Dermatology
7000 Portage Road, 9157-298-224
Kalamazoo, MI 49001

Phone: 616/329-8459
FAX: 616-328-5291

**Ram K. Tripathi Ph.D.**
University of Cincinnati
Department of Dermatology, Mail #592
231 Bethesda Avenue
Cincinnati, OH 45267-0592
Phone: 513-558-6242
FAX: 513-558-0198

**Maria C. Tuma**
Indiana University Medical Center
Department of Anatomy
635 Barnhill Drive
Indianapolis, IN 46202-5120
Phone: 317/274-7326
FAX: 317/274-7434
E-Mail: tuma@anatomy.iupui.edu

**Kazunori Urabe, M.D., Ph.D.**
Kyushu University
Faculty of Medicine
Department of Dermatology
3-1-1 Maidashi, Higashi-ku
Fukuoka 812, Japan
Phone: 81-92/641-1151
FAX: 81-92/651-6210

**Setaluri Vijayasaradhi Ph.D.**
Rockefeller University
Laboratory of Investigative Dermatology
Box H-30, 1230 York Avenue
New York, NY 10021
Phone: 212/ 327-8047
FAX: 212/ 327-8232
E-mail: setaluv@rockvax.rockefeller.edu

**Maria A. Visconti**
Univ. de Sao Paulo-Biociências
R. Do Matao - Travessa 14
Cidade Universitaria CP 11176.
Sao Paulo, SP 05422-970 , Brazil
Phone: 55-11/818-7523
FAX: 55-11/817-7422
E-Mail: maviscon@cce.usp.br

**Michael M. Wick M.D., Ph.D.**
1180 Beacon Street, Suite 6A
Brookline, MA 02146
Phone: 617/232-2637
FAX: 617/735-9068

**Leon M. Wilkins Ph.D.**
Transkaryotic Therapies
195 Albany Street
Cambridge, MA 02139
Phone: 617/349-0200
FAX: 617/491-7903

**Loren Wipf B.S.**
South Dakota State University
Department of Biology and Microbiology
SDSU Ag Hall 327
Brookings. SD 57007
Phone: 605/688-4554
FAX: 605/688-5624

**George L. Wolff Ph.D.**
National Center for Toxicological Research
Division of Nutritional Toxicology
3900 NCTR Road
Jeffereson, AR 72079-9590
Phone: 501/543-7522
FAX: 501/543-7635
E-mail: gwolff@fdant.nctr.fda.gov

**Joseph J. Yohn M.D.**
University of Colorado
Department of Dermatology
B153, 4200 East Ninth Avenue
Denver, CO 80262
Phone: 303/270-7136
FAX: 303/270-8272

**Shimatani Youichi**
Shiseido Company Ltd.
R & D Planning Division
R & D Headquarters
7-5-5 Ginza, Chuo-ku
Tokyo 104-10 JAPAN
Phone: 81-3/3571-9477
FAX: 81-3/3572-2675

**Lisa Zeise Ph.D.**
MEL-CO
4255 Count Road MM
Orland, CA 95963
Phone: 916/865-9033
FAX: 916/865-4092

**Huiquan Zhao Ph.D.**
University of Cincinnati
Department of Dermatology
231 Bethesda Avenue
Cincinnati, OH 45267
Phone: 513/558-6242
FAX: 513/558-0198

**Shuangwen Zhou Ph.D., M.D.**
UMDNJ-New Jersey Medical School
Dept of Radiology, Cancer Biology Section
185 South Orange Avenue, MSB 3586

Newark, NJ 07103-2714
Phone: 201/984-3421